Title
Marital Support, Well-Being, and Health in Everyday Life

Author
Wang, Shu-wen

Publication Date
2012

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Los Angeles

Marital Support, Well-Being, and Health in Everyday Life

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Psychology

by

Shu-wen Wang

2012

ABSTRACT OF THE DISSERTATION

Marital Support, Well-Being, and Health in Everyday Life

by

Shu-wen Wang

Doctor of Philosophy in Psychology

University of California, Los Angeles, 2012

Professor Rena Repetti, Chair

The dissertation is a two-paper investigation of observed naturalistic marital support behavior in a sample of 30 dual-earner middle-class couples with school-aged children who were videotaped in their homes over 4 days (two weekdays, two weekend days). Couples also self-reported on marital satisfaction, job stress, and emotional distress, as well as provided salivary cortisol samples that permitted analysis of diurnal cortisol slopes. Study 1 entails the conceptualization, development, and implementation of a novel observational coding system for naturalistic marital support behavior that provides a comprehensive descriptive analysis of couple support interactions as they unfold in everyday contexts. Analyses indicate that support interactions were relatively rare, predominantly brief (< 30 seconds long), more often solicited than offered, mostly instrumental compared to emotional in content, and overwhelmingly positive versus negative in emotional quality. In addition, patterns were examined among the different support variables; in particular, findings counter the Support Gap Hypothesis and

suggest that wives receive more support than husbands, due specifically to wives soliciting more support. Study 2 examines the predictors and outcomes of couple support behavior using the self-reported individual variables and diurnal cortisol slopes. Findings support the notion that emotional distress and job stress predict the support behavior of both spouses. Interesting sex differences emerged, whereby wives' depressive symptoms, wives' job stress, and husbands' neuroticism appeared to have the strongest influence on supportive behavior. However, analyses indicate little evidence for couple support behavior as a predictor of marital satisfaction and diurnal cortisol slopes. The dissertation provides first insights into couple support processes as they spontaneously unfold in naturalistic settings, highlighting the utility of naturalistic observation to shed light on real-life social behavior and its links with health and well-being.

The dissertation of Shu-wen Wang is approved.

Thomas Bradbury

Anna S. Lau (Chung)

Elinor Ochs

Theodore Robles

Rena Repetti, Committee Chair

University of California, Los Angeles

2012

TABLE OF CONTENTS

LIST OF TABLES

Study 1

LIST OF FIGURES

ACKNOWLEDGMENTS

This research was supported by a Dissertation Year Fellowship (2010-2011) and the Dr. Ursula Mandel Scholarship (2010) both granted by the UCLA Graduate Division. The author also gratefully acknowledges support from the UCLA Center on Everyday Lives of Families (2007-2010) funded by the Alfred P. Sloan Foundation, and a Mental Health and Substance Abuse Services Predoctoral Fellowship (2007-2010) from the American Psychological Association Minority Fellowship Program. Suffice it to say, there would be no dissertation without the support and access to data granted to me by the UCLA Center on Everyday Lives of Families. I extend my sincerest thanks to the 32 families who opened their homes and their lives to our center, and in doing so, afforded me the privilege of studying their everyday family processes.

This dissertation was completed with the support of several individuals that I would like to acknowledge. First and foremost, I would like to express my heartfelt gratitude to my advisor and committee chair, Dr. Rena Repetti. Rena, your professional and personal mentorship, steady guidance, and enduring faith in me over the years have shaped me both as a researcher and as a person. I couldn't have imagined a more rewarding or fulfilling graduate school experience and am forever grateful for the wealth of opportunities you have provided me. I would also like to thank Dr. Anna Lau for her research mentorship and constant support throughout graduate school. I have learned so much working with you and greatly appreciate the role you played on my committee. I am also indebted to the three remaining members of my committee. To Dr. Elinor Ochs, thank you for the financial support and encouragement you brought my way through your direction of CELF, and your helpful input into this research. To Dr. Thomas Bradbury, your critical insights and guidance starting from the very early stages of this project

through its end-product have proven invaluable. To Dr. Theodore Robles, thank you very much for contributing your expertise particularly in health psychology to my dissertation.

This research would not have been possible without my exceptional team of research assistants who served not only as superb video coders but often provided unique and good-humored insights into the social processes we observed that shaped my thinking. Many thanks go to Jonathan Orlin, Dorothy Xiao, Sarah Clay, Hanh Ly Cao, Jessica Tram, Elizabeth Pinkel, Jefri Vanegas, Nicholas Gantert, and Laurel Hyatt-Miller. I would also like to thank Dominik Schoebi, Darby Saxbe, Justin Lavner, and the UCLA ATS Statistical Consulting Group for their valuable assistance with the statistical analyses for the dissertation.

My friends and labmates at UCLA have provided tremendous practical help, encouragement, and fun times during my years in the program. In particular, I thank Najwa Culver, Joey Fung, Lisa Liu, and Jacqui Sperling for their support and friendship. Others in the Repetti Lab and Lau Lab have been excellent peer mentors and collaborators and I am thankful that I had the opportunity to learn and grow as a researcher in such friendly and stimulating environments. Outside of UCLA, I was blessed with a community of faith and deep friendships at University Presbyterian Church. My special thanks go to Pastor Soon and Esther Chung and the members of the Family Cell group (the Yungs, the Lius, the Huis, the Hongs, and the Minnes) for their prayers, support, and many years of wonderful memories.

My parents and siblings have been a wealth of love and support over the past 30 years. To Mama (Yueh-nan Wang) and Baba (Zenn Wang), I am forever grateful to you for the sacrifices you have made that allow me to be where I am today. Thank you for your unwavering love and encouragement over the years, and your belief in my taking this path. In particular, thank you Mama for spending so much of the last 3 years here in LA helping me juggle

motherhood and graduate school – I couldn't have done it without you! To my siblings, Shirley and Victor, thank you for all the laughter, visits to LA, and keeping me grounded. To my in-laws, Jerry and Anny Wong, thank you for your support, the free childcare, and most importantly, for giving me David.

My own growing family inspires me and surrounds me with love each day. To my dear husband David, you are a wonderful partner, an amazing father, and my best friend. I am blessed to share this life with you and I consider this accomplishment our accomplishment. Thank you for helping me to dream this big. To my darling daughter Kayley, your infectious smile and bubbly personality light up the world. I have been indescribably touched and changed by your presence in my life, and I am so happy and proud to be your mother. To my unborn baby Brandon, your kicks and punches remind me everyday what it's really all about – we cannot wait to meet you! I love you all from the bottom of my heart.

Finally, I give thanks to God to whom I owe my existence, my salvation, and my life's purpose and meaning.

VITA

2004	B.A., Psychology and Anthropology (Summa Cum Laude) Barnard College, Columbia University
2007	M.A., Psychology University of California, Los Angeles
2007	Honorable Mention National Science Foundation Graduate Research Fellowship
2008	Student Research Grant UCLA Institute of American Cultures
2008-2009	Graduate Research Mentorship Fellowship UCLA Graduate Division
2009	Student Research Award (RISE Award) Association for Psychological Science
2009	Faculty Women's Club Scholarship UCLA Graduate Division
2009	Affiliates Scholarship UCLA Graduate Division
2007-2010	Mental Health and Substance Abuse Services Predoctoral Fellowship Minority Fellowship Program, American Psychological Association
2007-2010	Graduate Student Fellow UCLA Center on Everyday Lives of Families, Alfred P. Sloan Foundation
2010	Student Research Award American Psychological Association Division 38 (Health Psychology)
2010	Okura Mental Health Research Grant UCLA Asian American Studies Center
2010-2011	Dissertation Year Fellowship UCLA Graduate Division
2010-2011	Dr. Ursula Mandel Scholarship UCLA Graduate Division
2011-2012	Clinical Psychology Intern Veterans Affairs West Los Angeles Medical Center (General Track)

SELECTED PUBLICATIONS

Wang, S., & Boerner, K. (2008). Staying connected: Reestablishing relationships following vision loss. *Clinical Rehabilitation, 22*(9)*,* 816-824.

Lau, A. S., Fung, J. J., Wang, S., & Kang, S. (2009). Explaining elevated social anxiety among Asian Americans: Emotional attunement and a cultural double bind. *Cultural Diversity and Ethnic Minority Psychology, 15*(1)*,* 77-85.

Repetti, R. L., & Wang, S. (2009). Work-Family Spillover. In H. T. Reis and S. K. Sprecher (Eds.) *Encyclopedia of Human Relationships*(pp. 1694-1697). Thousand Oaks, CA: Sage.

Repetti, R. L., & Wang, S. (2009). Parent employment and chaos in the family. In G. W. Evans and T. D. Wachs (Eds.) *Chaos and its influence on children's development: An ecological perspective* (pp. 191-208). Washington, DC: American Psychological Association.

Repetti, R. L., Wang, S., & Saxbe, D. (2009). Bringing it all back home: How outside stressors shape families' everyday lives. *Current Directions in Psychological Science,18,* 106-111.

Wang, S., Shih, J. H., Hu, A. W., Louie, J. Y., & Lau, A. S. (2010). Cultural differences in daily support experiences. *Cultural Diversity and Ethnic Minority Psychology, 16*(3)*,* 413-420.

Liu, L. L., Wang, S., Fung, J., Gudiño, O. G., Tao, A., & Lau, A. S. (2011). Strengths and challenges in the development of Asian American youth: Contributions of cultural heritage and the Minority Experience. In E. Chang and C. Downey (Eds.) *Handbook of Race and Development in Mental Health.* New York: Springer.

Repetti, R. L., Wang, S., & Saxbe, D. (2011). Adult health in the context of everyday life. *Annals of Behavioral Medicine, 42*(3), 285-293.

Wang, S., Repetti, R. L., & Campos, B. (2011). Job stress and family social behavior: The moderating role of neuroticism. *Journal of Occupational Health Psychology*, *16*(4), 441-456.

Repetti, R. L., Saxbe, D., & Wang, S. (in press). Carrying work stress back home: Spillover, recovery, and withdrawal. In E. Ochs and T. Kremer-Sadlik (Eds.) *Fast-Forward Families*. California : University of California Press.

Repetti, R. L., Wang, S., & Sears, M. (in press). Using direct observational methods to study the real lives of families: Advantages, complexities, and conceptual and practical considerations. In J. G. Grzywacz and E. Demerouti (Eds.) *New Frontiers in Work and Family Research.* New York: Psychology Press & Routledge.

Wang, S., & Repetti, R. L. (in press). After the workday ends: How jobs impact the family. In A. L. Vangelisti (Ed.) *Handbook of Family Communication.* New York: Routledge.

STUDY 1

OBSERVATIONS ON THE GROUND:

MARITAL SUPPORT IN NATURALISTIC CONTEXTS

Human beings are social animals, existing in webs of interpersonal connections that shape their experiences and influence their physical and mental health. Relatedness, or the need to feel belongingness or connectedness with others, has been described as a basic psychological need (Ryan & Deci, 2000), and social relationships across multiple contexts have been examined in terms of their impact on social, psychological, and physiological functioning. In particular, researchers have focused on close or intimate relationships as a key site where processes relevant to relationship satisfaction, health, and well-being are enacted. Research in this area has documented an extensive literature on the links between marital relationship functioning with psychological well-being (see Proulx, Helms, & Buehler, 2007, for a meta-analysis), as well as physical health mechanisms and outcomes (see Kiecolt-Glaser & Newton, 2001, for a review).

Social support – a ubiquitous concept in relationship science—is one interpersonal dyadic process that has garnered special attention amongst couple researchers. Research has widely documented the many physiological and mental health benefits of social support, that include improved immune, cardiovascular, and neuroendocrine functioning; positive adjustment to chronic disease; and decreased depression and anxiety, as well as evidence that support helps buffer against the negative effects of stress (Seeman, 1996; Thoits, 1995; Cohen, 2004). Romantic partners play a critical role in support provision in committed couples, and support provided by a spouse appears to be particularly important compared to support received from other sources (e.g., Julien & Markman, 1991; Beach, Martin, Blum, & Roman, 1993; Coyne & DeLongis, 1986). In fact, individuals who report higher levels of marital support also report

higher concurrent marital satisfaction (e.g., Acitelli & Antonucci, 1994; Julien & Markman, 1991) and feelings of intimacy and closeness (e.g., Belcher et al., 2011; Gleason, Iida, Shrout, & Bolger, 2008). Furthermore, negative support processes are an important predictor of longitudinal marital distress (e.g., Pasch & Bradbury, 1998) and divorce even in couples who reported high marital satisfaction as newlyweds (Lavner & Bradbury, 2012). As such, the marital relationship provides a prime context in which to study support as a dyadic interpersonal process, with implications for relationship outcomes and individual health and well-being.

The couple literature has traditionally employed cross-sectional and longitudinal questionnaire designs that ask participants to self-report on support receipt and outcomes relevant to health and well-being. Methodological developments in the field have moved past traditional survey designs to capitalize on daily reports (see Laurenceau & Bolger, 2005, for a review) and observational and physiological techniques in the laboratory (see Gottman & Notarius, 2000, for a review) to study relationship processes with greater conceptual and methodological precision. Daily report studies have provided critical insights into support exchanges as they occur on a prospective and daily basis, in particular highlighting the transactional nature of support and permitting study of both provider and recipient accounts of behavior and mood (e.g., Neff & Karney, 2005; Iida, Seidman, Shrout, Fujita, & Bolger, 2008; Belcher et al., 2011). For example, daily report studies have examined the notion of support visibility (i.e., whether provided support is recognized by the receiver) and supportive equity (i.e., when support is provided and received by both partners) in couples. These studies have found that emotional support is beneficial for mood when it is invisible to the receiver, but is costly for mood when it is visible (Bolger, Zuckerman, & Kessler, 2000; Shrout, Herman, & Bolger, 2006), a finding not replicated for practical support (Shrout, et al., 2006); and that

receiving support without reciprocation is linked with negative mood, whereas reciprocal support transactions are beneficial for mood (Gleason, Iida, Bolger, & Shrout, 2003; Gleason et al., 2008). Thus, daily report methods have unearthed new insights into the nuanced costs and benefits of supportive behavior not possible with cross-sectional and longitudinal designs.

This conceptual and methodological attention to the contributions of both partners in a support interaction is reflected in laboratory observation research that provides an objective third-party view of support interactions as they occur in laboratory settings structured by researchers. Drawing from behavioral models of marriage based on social learning theory (Jacobson & Margolin, 1979), an interpersonal or interactional approach to studying marriage examines how couples engage with and respond to one another in predicting relationship outcomes. For example, in a study of newlywed heterosexual couples who engaged in both marital conflict and social support tasks, Pasch and Bradbury (1998) found that wives' support solicitation and provision behaviors predicted marital distress at 2 year follow-up independent of negative behaviors displayed during marital conflict discussions. In another sample of newlywed heterosexual couples, Sullivan and colleagues (2010) found that lower levels of positive support behaviors and higher levels of negative support behaviors at baseline predicted increases in negative emotion displayed during problem-solving conversations held 1 year later. Laboratory observation studies have also revealed that not all support is helpful; for example, when solicitations for a certain kind of support (i.e., emotional or instrumental) are met with the non-matching kind of support, marital satisfaction suffers (Cutrona, Shaffer, Wesner, & Gardner, 2007). These laboratory observation studies demonstrate the utility of directly observing turn-by-turn social interactions, rather than relying on subjective post hoc reports of behavior.

Both daily report and laboratory observation methods highlight the need to examine social support as an interpersonal dyadic process in which the experiences of both partners are highlighted. While both methods are substantial improvements on cross-sectional designs, they each have conceptual and methodological "blind-spots" (Repetti, Wang, & Sears, in press). Daily report methods provide a daily perspective on everyday processes, but do so through the filtered and subjective lens of participants' retrospective self-reports. Perceptions of support interactions are superbly tapped by this methodology; objective records of support behavior are not. On the other hand, laboratory observation provides direct inspection of supportive interactions as they take place in real-time, but do so at the loss of ecological validity. Laboratory observation may be tapping a set of behaviors and processes that at the very least may be specific to structured situations, but even at best, may not always map on to real-world behavior and experiences. For example, studies have found that conflict discussions in the lab were less negative than home conflict discussions (e.g., Gottman, 1979; Gottman & Krokoff, 1989), and daily report studies have indicated that emotions and behavior exhibited in public arenas (e.g., the workplace) differ than those emotions and behavior occurring in private spheres (e.g., the home; Larson, Richards, & Perry-Jenkins, 1994). Observations of conflict interactions in 'seminatural' settings designed to mimic the home (e.g., 'apartment laboratory') have also differed from conflict observed in the lab (Gottman & Driver, 2005). The implicit assumption made by these methods is that they are approximating what actually happens in couples' relationships in the naturalistic context of everyday life. Strikingly, a ground-level perspective of everyday support interactions as they unfold *in situ* is lacking.

For example, data on naturalistic couple interactions would illuminate the *actual* supportive behavior of husbands and wives, either supporting or refuting the notion of a marital

support gap that is a central concept in the support literature. The Support Gap Hypothesis suggests that in heterosexual couples, husbands receive more support and more helpful support from their wives than wives do from their husbands (e.g., Belle, 1982, Cutrona, 1996). This has been attributed to differences in the size and nature of spouses' support networks (Phillipson, 1997), differences in how men and women cope with stressors, with women being more likely than men to engage in nurturing behavior and to draw on affiliative bonds (i.e., tend-and-befriend; Taylor et al., 2000), as well as purported different gender cultures that shape men's and women's social roles and self-construals to be either more caring and interdependent or more mastery-oriented and independent (e.g., Gilligan, 1982; Cross & Madson, 1997; Eagly, 2009).

However, the existence of a support gap has been primarily based on self-report studies and researchers have questioned the validity of this notion (e.g., MacGeorge, Graves, Feng, Gillihan, & Burleson, 2004; Verhofstadt, Buysse, & Ickes, 2007). Some self-report studies show no sex difference in perceptions of support (Neff & Karney, 2005) and in fact, laboratory observation studies have indicated that while husbands may self-report receiving significantly more support than wives do, observed support transactions show no such sex differences in the amount of support provided and received (e.g., Verhofstadt et al., 2007; Neff & Karney, 2005), and have found either no sex differences in the amount of positive or negative support behavior (Verhofstadt et al., 2007; Lawrence, Rothman, Cobb, Rothman, & Bradbury, 2008; Pasch & Bradbury, 1998) or have suggested that wives actually show more negative support behavior than husbands (Pasch et al., 1997). Furthermore, self-report data suggest differences in the kinds of support that are more typically provided by men and women; women are reported to provide more emotional support whereas men provide more instrumental support (Burleson & Kunkel, 2006; Cutrona, 1996). However, observational research has found no sex differences in the

provisions of either emotional support or instrumental support in couples (Verhofstadt et al., 2007; Lawrence et al., 2008). Given that laboratory observation and self-report studies show markedly different findings about the support behavior of husbands and wives, data on naturalistic support interactions would shine some much needed light in this area.

The Present Research

Study 1 of this dissertation aims to fill the gap in the literature on observed naturalistic support interactions and provides a comprehensive descriptive analysis of marital support behaviors as they occur in everyday interactions inside the home. Towards this end, this dissertation uses a novel naturalistic dataset generated by the Center on Everyday Lives of Families (CELF), an interdisciplinary research group located at the University of California, Los Angeles, and funded by the Alfred P. Sloan Foundation. CELF intensively studied a week in the lives of 32 dual-earner middle-class families, using multiple methods that included videotaped naturalistic observation, self-report measures, salivary cortisol sampling, semi-structured interviews, and scan sampling (Ochs, Graesch, Mittman, Bradbury, & Repetti, 2006). Study 1 focuses on the four days of videotaped naturalistic observations to provide a window onto real-life everyday support interactions as they spontaneously unfold between spouses.

Social support is a diffuse construct that has been operationalized in different ways. It has generally been defined as "responsiveness to another's needs…acts that communicate caring; that validate the other's words, feelings or actions; or that facilitate adaptive coping with problems" (Cutrona, 1996; p. 10). Similarly, social support has also been defined as the perception or experience that one is loved and cared for, esteemed and valued, and part of a network of mutual assistance and obligation (Wills, 1991). Unlike previous research that used relationship status as a proxy for support, these functional definitions of social support focus on

the social resources that are provided and/or perceived to be available (Cohen, Gottlieb, & Underwood, 2000). This investigation adopts these functional definitions of social support, and focuses on observed explicit support behavior through which social resources are solicited or provided within a couple. *Thus, perceptions and attributions of support are not assessed; only observations of explicit support behaviors are coded.* In operationalizing different components of support for the dissertation (described more fully in the Method section), I draw on several concepts from the literature briefly reviewed here:

First, studies taking an interactional approach have typically identified roles played by individuals in support interactions, both in experimental laboratory studies where couples are assigned roles in an interaction (e.g., Sullivan et al., 2010), and in daily diary studies where samples capitalize on couples in which one partner is facing an upcoming major stressor and is the identified recipient of support (e.g., the bar exam; Iida, et al., 2008). In general, there is typically an identified *provider* of support, or helper, and also a *recipient* of support, or helpee.

Secondly, scholars have theorized about the different kinds of support transactions that may occur, noting that support may be solicited (or "elicited") by the potential support recipient or support may be offered (or "enacted") by the provider (Pierce, Sarason, Sarason, Joseph, & Henderson, 1996). I conceptualize this distinction as the manner by which support is initiated. In this vein, support can be *solicited* by the recipient through direct requests or by making opportunities available for the partner to provide support, or *offered* or volunteered by the provider in the absence of solicitation by the recipient. A recent laboratory observation study found that specifically husbands' provision and wives' solicitation behaviors in couple support interactions predicted marital satisfaction (Lawrence, et al., 2008), highlighting the need to study not just the receipt of support but the manner by which support is instigated.

Third, support has traditionally been categorized into three different types of support – emotional, informational, and tangible (House & Kahn, 1995). Emotional support involves the provision of warmth, nurturance, and reassurance to another person that he or she is valuable and cared about. Tangible support – often termed instrumental support – refers to the provision of tangible and practical assistance, such as services and financial aid. Informational support entails helping another person better understand a stressful event and to determine what resources or coping strategies may be needed. Conceptually speaking, these categories of support are substantively different. Furthermore, the gender and coping literature theorizes that women tend to engage in interpersonal, emotion-focused coping, whereas husbands tend to withdraw interpersonally and prefer instrumental support (e.g., Cutrona, 1996; Matud, 2004). The visibility of instrumental and emotional support also appears to have different consequences for mood (Shrout et al., 2006); practical support appears to be helpful whether visible or invisible to the receiver, whereas emotional support is only helpful if it is invisible. Taken together, the literature indicates that it is necessary to distinguish between different types of support.

Last, there is a long tradition of observational studies examining the quality (i.e., positive or negative) of couple interactions, in particular for studies on conflict. For example, the mainstay concepts of negative affect reciprocity (i.e., the return of negative behavior with negative behavior; Gottman, 1980; Gottman, Coan, Carrere, Swanson, 1998), demand-withdraw (i.e., where one partner criticizes and pushes for change while the other partner withdraws or avoids; e.g., Heavey, Christensen, & Malamuth, 1995), and positive engagement behaviors (Ackerman, Kashy, Donnellan, & Conger, 2011) all rest upon the notion that the quality of different behaviors and the patterns they engender are relevant for understanding family process. Even the examination of rates of negative and positive behavior during conflict interactions have

been shown to predict marital satisfaction over time (e.g., Karney & Bradbury, 1997). These investigations of interactional patterns have typically involved coding systems within the laboratory that classify observed behaviors with regard to positive and negative quality.

Research Questions

The research questions addressed by Study 1 all pertain to providing a descriptive behavioral analysis of couple support as it naturally occurs in everyday settings. Because there are no published studies on observed naturalistic couple support interactions, many of the questions are exploratory in nature.

The first two questions are exploratory descriptive questions that ask what marital support behaviors look like using the *individual support behavior* as the unit of analysis. These questions first explore how frequently support occurred, providing the first glimpses in the field into exactly how often spontaneous couple support interactions take place in the natural context of the home. Then, when support is observed, these questions focus on the frequency with which provider and receiver roles were played by husbands versus wives, the manner by which support was initiated, the type of support that occurred, and the quality of the initiation and response to support. Frequencies of support behaviors are studied in two ways: as proportions given the amount of time couples were observed together, and as proportions given that a support interaction was observed and coded.

RQ1: What is the rate of different support behaviors given that a couple was observed together?

RQ2: What is the rate of different support behaviors given that a support interaction occurred?

The third research question also takes an exploratory approach using *the individual support behavior* as the unit of analysis and examines patterns of specific support behaviors in

everyday couple interactions. Are certain aspects of support more likely to occur with certain other aspects of support? For example, one interesting pattern addressed by this question is whether the type of support (instrumental or emotional) is linked to the sex of the solicitor. Researchers have theorized that there are differences in the ways in which men and women cope with stressors and negative events, suggesting that women prefer emotional support, whereas husbands prefer instrumental support (e.g., Cutrona, 1996; Matud, 2004). Perhaps, then, husband-solicitations will be linked with instrumental support, whereas wife-solicitations will be linked with emotional support. This question takes an exploratory approach to examine this pattern, as well as others, among various support behaviors.

RQ3: Are there patterns in the co-occurrences of certain support behaviors?

The next research question shifts the lens away from the individual support behavior to examine how those behaviors take place *within the couple* as the unit of analysis. In contrast to the first three research questions that examined support behaviors using the individual support behavior as the unit of analysis, now I address support by exploring rates of different support behaviors for each couple. I am now able to determine the average rate of support occurrences and the average rate of specific support behaviors for each couple.

RQ4: What does marital support behavior look like at the couple level?

Next, I examine sex differences in rates of support behaviors at the level of the couple. Specifically, I test the Support Gap Hypothesis which suggests – based on self-report studies – that husbands receive more support and more helpful support from their wives than wives do from their husbands (e.g., Belle, 1982, Cutrona, 1996). Laboratory observation studies, on the other hand, have countered this theory (e.g., Verhofstadt et al., 2007; Pasch et al., 1997; Neff &

Karney, 2005; Lawrence et al., 2008). Thus, this question seeks to test the Support Gap Hypothesis with naturalistic data on everyday couple support interactions.

RQ5: Are there sex differences in behavior during couple support interactions?

Here, I pose a series of questions all *at the couple level* about how the 4 main aspects of support assessed in this study (roles, initiation, type, quality) are associated with one another as well as other characteristics of support within couples. The questions pertain to rates of received support by husbands and wives, support initiation, support type, and support quality.

Daily report data have shown that spouses who tend to receive more support also tend to have partners who also receive more support (Lawrence et al., 2008); in short, there appear to be "high support" couples and "low support" couples where spouses match one another in support provision. The sixth question aims to test this with naturalistic observational data. I then ask whether the rate of husbands (versus wives) being the receivers of support is associated with the rate of other characteristics of support interactions. The Support Gap Hypothesis would suggest that as the rate of husbands being the receivers of support increases across couples, the amount of offered support, positive support, and emotional support would increase. The seventh question explores whether there is support for these associations.

RQ6: Within a couple, is there an association between the proportion of support received by a husband and the proportion of support received by a wife?

RQ7: Is the sex of the partner who receives the most support linked with other characteristics of support interactions in a couple?

The next 6 questions ask about associations between rates of support solicitations and offers (RQ8), instrumental and emotional support (RQ10), and positive and negative support quality (RQ12), examining whether rates of these behaviors increase or decrease together (i.e.,

positive associations) or whether couples preferentially display one type of support behavior to the decline of the other (i.e., inverse associations).

RQ8: Within a couple, is there an association between rates of support solicitations and support offers?

RQ10: Within a couple, is there an association between rates of instrumental support and emotional support?

RQ12: Within a couple, is there an association between rates of positive support and negative support?

RQ9, RQ11, and RQ13 explore the linkages among all of these proportions of support behaviors. Due to a lack of prior research, these questions remain exploratory.

RQ9: Are rates of solicited support and offered support within a couple linked with other characteristics of their support interactions?

RQ11: Are rates of instrumental support and emotional support within a couple linked with other characteristics of their support interactions?

RQ13: Are rates of positive and negative support interactions within a couple linked with other characteristics of their support interactions?

The last 3 questions ask whether different methods of initiating support are linked within couples by examining associations among *rates of initiation methods* computed separately for husbands and wives (husband-offers, husband-solicitation, wife-offers, wife solicitations) with other characteristics of support. RQ14 explores whether husbands and wives tended to use the same type of support initiation strategy as their partner; do spouses appear to match each other in their style of initiating support? RQ15 then asks whether the two methods of support initiation (solicitations and offers) were correlated within husbands and within wives; does a spouse use both strategies at similar rates, or do individuals seem to prefer one strategy over another? The final question explores whether the rate of solicitations by one spouse is linked to the rate of offers by the partner. A positive association would indicate that spouses' initiations of support

appeared to consistently benefit one member in the Receiver role (e.g., a positive association between husband-solicitations and wife-offers would benefit husbands as receivers), whereas a negative association would suggest that as one spouse increased one type of initiation behavior, the other spouse decreased the other type of initiation behavior.

RQ14: Are rates of offers (and solicitations) correlated between husbands and wives?

RQ15: Are rates of offers and solicitations correlated within husbands (and wives)?

RQ16: Is a partner's rate of support initiation (solicitations, offers) linked with his/her spouse's rate of the other mode of support initiation (solicitations versus offers)?

Capitalization

While the dominant focus of the dissertation is on social support as traditionally defined in the context of a negative or stressful event, a final exploratory section examines supportive interaction that takes place in response to fortunate or positive events from which an individual derives added benefit; this type of support is called *capitalization* (Langston, 1994). Researchers have theorized that interpersonal processes surrounding positive events may have independent associations with health and well-being than those having to do with negative or stressful events, and may also be differently linked with marital quality and satisfaction (Gable & Reis, 2001). Studies indicate that capitalization is associated with increased positive mood and well-being above and beyond the impact of the positive event itself (Langston, 1994; Gable, Reis, Impett, & Asher, 2004), and that these benefits are enhanced when others are perceived to respond positively (Gable et al., 2004). Conceptually speaking, the sharing of positive events has the potential to encourage positive social interactions that may strengthen relationships (Gable & Reis, 2001), encourage intimacy (Reis & Shaver, 1988), and boost self-esteem (Beach & Tesser, 1995). Daily report data suggest that the sharing of positive events with others also predicts

recall of the positive event, which allows individuals to relive and "bask" in the glory of positive occurrences (Gable et al., 2004). Longitudinal research conducted with couples has also determined that positive event discussions were more closely associated with relationship well-being and break-up than were support interactions regarding negative events (Gable, Gonzaga, & Strachman, 2006). Thus, support provided in the context of fortunate or positive events appears to be a complementary but distinct supportive dyadic process with implications for relationships and well-being. Because the capitalization field is very young and even less is known about support in positive contexts, this part of the dissertation remains exploratory and aims to simply describe whether and how capitalization occurred in everyday couple interactions.

Method

Participants

CELF participants included 32 dual-earner middle-class families residing in the greater Los Angeles area. Study inclusion was based on the following four criteria: a) each family included two cohabiting adults; b) both spouses worked full-time (at least 30 hours per week); c) each family included two to three children, one of whom was aged 8 to 12 years old; d) each family owned a home with a mortgage. These criteria ensured that the families included in the study represented dual-earner middle-class families with school-age children at similar developmental stages. All families were compensated $1,000 for their participation (Ochs, et al., 2006; Campos, Graesch, Repetti, Ochs, & Bradbury, 2009).

The data used in both Study 1 and Study 2 were collected from 30 families[1]. The median age for both husbands and wives was 41 years, with a range of 32-58 years for husbands and 28-50 years for wives. The couples had been married for a range of 3-18 years (median = 13 years), and the families had an average of 2.3 children. The median family income was $100,000, and the majority (65%) of spouses had completed college. The families participating in the study came from diverse ethnic and cultural backgrounds, with Caucasian, African-American, Latino, East Asian, South Asian, and multicultural families represented in the sample. About 33% of the families had at least one member who identified as non-European American.

Procedure for Naturalistic Observation

The CELF study captured a week in the lives of these dual-earner middle-class families using multiple methods including naturalistic observation, self-report measures (questionnaires and diary reports), semi-structured interviews, and salivary cortisol sampling (Ochs et al., 2006). The portion of the data used in this study (Study 1) come from the intensive naturalistic observation of family members as they went about their daily routines across four days (two weekdays and two weekends). Two cameras were assigned to follow each family with husbands and wives each being targeted by one camera. Wireless microphones were used to capture all dialogue. On weekdays, filming began on each day in the morning (when the first parent to wake opened the door to the waiting research team), capturing early morning routines and interactions as the family members prepared for work and school, and resumed in the afternoons when the husbands and wives left work for home. Family routines and interactions were then continuously filmed until the children went to bed, at which time filming ended. On weekends,

[1] A total of 32 families were studied by CELF. However, only the 30 families headed by heterosexual couples are used in the proposed study given the interest in partner sex differences. Data from the two families headed by homosexual couples were used in piloting and development of the project.

cameras followed the families from the early morning through the evening until the children went to bed. Data collection resulted in over 1600 hours of footage.

Development of the coding system for naturalistic marital support behavior

The development of the new observational coding system to capture naturalistic marital support required a multi-step process that included the following, described in more detail below: (1) identifying video of couples together, (2) creating video clips, and (3) coding video clips.

Identifying video of couples together

Because couples were followed by cameras as they went about their daily routines, the videotaped observations contained a wide breadth of material, spanning from solitary activity to a range of interactions with family members (i.e., spouse) and non-family members (i.e., neighbor, child's friend) over the four days of filming. Specially adapted digital software developed for use in the CELF study (called VPRISM) was used to "cull" the video for only instances in which couples appeared together on-screen (termed "couple time"), thus reducing over 1600 hours of video to only those couple time video in which there was the potential for a marital support interaction to take place. Because this search process resulted in footage that potentially lasted for only a few seconds (e.g., if the spouse briefly appeared while passing through the room), a criterion of *at least* 10 seconds was used to determine reasonable opportunity for a supportive interaction. A total of over 174 hours of video (174:52:08, hours:minutes:seconds) met this criterion across the 30 families, with values ranging from less than 1.5 hours to more than 14 hours for individual families (M = 5:49:44, SD = 2:41:50), indicating considerable variability across families in the amount of time that couples were co-present. Because the culled video include common footage captured by two cameras (one targeting the husband and one targeting the wife), approximately half of the video are duplicates

of the same event and thus only about 87 total hours of culled video reflect unique couple time onscreen. To resolve the duplicate footage issue, one camera's footage of couple time (e.g., the husband's footage) was used for the first weekday and first weekend day, and the other camera's footage of couple time (e.g., the wife's footage) was used for the second weekday and second weekend day[2]. Four couples experienced 1 weekday each in which the husband did not return home after work until after filming concluded; in these cases, one camera's footage was randomly chosen for coding.

Creating video clips

Next, a set of coding rules was used to systematically "slice" the culled couple time video into standard units (i.e., video clips) for coding. All resulting video clips ranged from 10 to 30 seconds long. Video culled by VPRISM that were longer than 30 seconds were sliced first into a 30 second clip, with the remainder of the video (if between 10 and 30 seconds long) constituting a second clip. If the remainder of the video was shorter than 10 seconds long, it was discarded.

This slicing procedure generated a library of 11,261 total couple clips, with a mean of 375 couple clips per couple (SD = 192; range 80 -878). For the two weekdays, there was a total of 5,231 couple clips, with a mean of 174 weekday couple clips per couple (SD = 106; range 27-495). For the two weekend days, there was a total of 6,030 couple clips, with a mean of 201 weekend couple clips per couple (SD = 131; range 32-579). The range of total clips for couples was quite large; for example, the couple with 878 clips had about 7 hours of footage compared to the couple with 80 clips that had less than 1 hour of footage. To address the overrepresentation of data from outlier couples who shared more couple time together, and to be efficient with coding resources given that analyses using couple-level proportions would not meaningfully

[2] This solution was chosen based on a preliminary examination of footage from both cameras for one full day of one of our pilot families. It was determined that there was negligible benefit to using footage from both cameras, resulting in the decision to systematically rotate which camera's footage was used for coding purposes.

change with the addition of extra hours of footage, coding was limited to 480 clips (i.e., the equivalent of about 4 hours) per couple. *Thus, all coding for couples was based on approximately 1 hour to 4 hours of video per couple.* Eight couples had footage exceeding the 480 clip limit. Given the limit of 480 clips per couple, the overall library of couple clips was reduced to 10,030 total couple clips, with a mean of 335 couple clips per couple (SD = 132; range 80 - 480). Clips were carefully eliminated based on inspection of how many clips represented each of the four days for each of the eight couples, with the goal of reducing clips on days with more footage and maintaining the number of clips on days with less footage, while also preserving the continuity of events.

Coding naturalistic marital support

A coding system was developed to identify and describe explicit support exchanges in everyday couple interactions, looking at both social support opportunities (i.e., for a partner's negative event or need) and capitalization opportunities (i.e., for a partner's positive event or good fortune) over the four days of filming. Coding involved a two-phase process. Phase 1 entailed the identification of opportunities for supportive interactions (termed "anchor behaviors" because they signify secure points around which a potentially supportive interaction could occur), and upon their identification, the further coding of these anchor behaviors on multiple dimensions. Phase 2 then involved searching for the precipitant or response to each support anchor behavior to understand the context in which the supportive interaction occurred. The coding manual can be found in full in Appendix A, and all codes are listed in Table 1 and 2.

Phase 1 Coding – Anchor Behaviors. Phase 1 coding consisted of identifying and describing explicit opportunities for support ("anchor behaviors") presented by one spouse (either the identified Provider or Receiver of support) that could potentially engage the partner in

a supportive interaction; thus, these behaviors "anchored" the Phase 2 coding that then searched for the context in which that behavior occurred.

Social support anchor behaviors were coded on the following dimensions:

- Support Initiation – An opportunity for support was coded whenever: (a) support was explicitly *solicited* or *invited* by a Receiver (e.g., "Can you wash the dishes?" "I've had a rough day; work was crazy."); (b) support was explicitly *acknowledged* by a Receiver (e.g., "Thanks," appreciative head-nods or smiles); or (c) support was explicitly *offered* by a Provider (e.g., "Do you want me to start dinner tonight?", pats on the back with sympathetic smile).
- Support Roles – The member of the couple (husband or wife) who played the Provider role (i.e., the "helper") and the member who was in the Receiver role (i.e., the "helpee") were identified.
- Type of Support –The substantive type of support was categorized as: (a) instrumental support (i.e., help with practical problems or tasks), (b) emotional support (i.e., empathy, encouragement, or guidance), or (c) both instrumental and emotional support. Examples of instrumental support include assisting a spouse with dinner preparation (instrumental) or helping a spouse figure out the fastest driving route (informational). An example of emotional support is listening empathetically to a spouse's frustrations about work.
- Anchor Quality – The *quality,* or emotional tone, of the anchor behavior was coded as: (a) positive/neutral (e.g., respectful, pleasant, task-oriented), (b) negative (e.g., disrespectful, blaming, hostile), or (c) mixed/ambiguous (i.e., when both positive/neutral and negative elements were apparent, such as with sarcasm).

Examples of a positive/neutral anchor behavior would be a spouse asking the partner if he/she needs help with cleaning up after dinner in a pleasant manner (positive) or in a task-oriented way (neutral). An example of a mixed/ambiguous anchor behavior would be a spouse commanding his/her partner to help with a task but doing so in a playful way (e.g., "Come! Wash dishes now!" jokingly). An example of a negative anchor behavior would be a spouse commanding his/her partner to do something in a scolding way (e.g., "I need you to give the kids a bath, I can't do everything!").

Capitalization anchor behaviors were coded on the following dimensions:

- Capitalization Initiation – Capitalization initiation was coded whenever: (a) a potential Receiver *disclosed* a positive event (e.g., "My boss told me I'm doing a great job."); or (b) a potential Provider *inquired* about a potentially positive event (e.g., "Weren't you supposed to have that review today?").
- Capitalization Roles – The member of the couple (husband or wife) who played the Provider role (i.e., the "helper") and the member in the Receiver role (i.e., the "helpee") were identified.

In addition, for both social support and capitalization anchor behaviors, coders noted the co-presence of others (i.e., someone other than the two spouses appeared on-screen) and instances when the anchor behavior was instigated by someone other than a spouse. For example, a child telling both spouses that she needs help with homework presents a situation in which the member who ultimately assists with the homework is conceptualized as providing support to the other member who now does not have to complete this task. Instigated support was only coded when it was clear that both members of a couple were presented with a third

party's need. The results of the coding showed that all instances of support instigated by a third party were instigated by a child; thus, this variable is referred to as instigated by a child.

Although multiple anchor behaviors may have occurred within a single clip, only the *first* anchor behavior was identified and coded to mark the potential for a supportive interaction to occur. Additionally, clips containing anchor behaviors that were part of an over-arching potentially supportive interaction that continued across multiple clips were coded as continuation clips, and the clip with the first anchor behavior signaling the start of the over-arching interaction was identified. For example, a wife may complain to her husband about a negative social interaction at work over several minutes, and in each of multiple clips, she may solicit support or the husband may offer support. Thus, multiple clips in a string of clips comprising a larger supportive interaction would be coded as having support anchors, but because these clips would be marked as a continuation clips and because the first clip in this string of clips was identified, the coding of the data facilitates the parsing out of *unique supportive interactions*, made up of multiple individual anchor behaviors.

Phase 2 Coding – Context. Phase 2 coding aimed to describe the context in which the anchor behavior emerged in each clip, specifically identifying the *precipitant* of acknowledged support or the *response* to a solicitation or offer of support.

- Context Identified –The search for the context of each Phase 1 anchor behavior clip extended up to 10 minutes prior to (for a precipitant) or 10 minutes after (for a response) the clip, and was coded as (a) *Context Found* when identified, (b) *Not Found* when the context was simply not observed in the 10 minute window before or after the anchor behavior, (c) *No Opportunity* for instances in which there was no opportunity for the potential Provider of support to respond if the Receiver or another

co-present person provided the support that the Receiver was seeking from the Provider, and (d) *Technical Difficulties* when technical issues (i.e., poor sound quality) interfered with being able to determine whether the context was found.

- Context Quality (Social Support) – The quality, or emotional tone, of the precipitant or response was coded as one of the following: (a) positive/neutral (i.e., respectful, pleasant, task-oriented), (b) negative (i.e., disrespectful, blaming, hostile), or (c) mixed/ambiguous (i.e., when both positive/neutral and negative elements seem apparent). For example, in response to a solicitation of support by the Receiver, the Provider might have said "OK" or may have silently completed the requested task. In both cases, the context would be coded as positive/neutral. A mixed/ambiguous response in this situation would be the Provider jokingly saying something that indicates displeasure or annoyance (e.g., "Again?!") while proceeding to provide the support. And last, if the Provider simply refused and/or responded antagonistically, such as saying, "Why don't you do it yourself?!" a negative context would be coded.
- Context Quality (Capitalization) – Following the dimensions of the Perceived Responses to Capitalization Attempts (PRCA) scale developed by Gable and colleagues (2004, 2006), the quality, or emotional tone, of the response to capitalization was coded as one of the following: (a) active-constructive (i.e., Provider is enthusiastically supportive; "That's wonderful news!"), (b) passive-constructive (i.e., Provider is silently supportive; smiles and head nods), (c) active-destructive (i.e., Provider finds a problem or downside), or (d) passive-destructive (i.e., Provider is disinterested; nods and then moves on to other activity).

Phase 1 and Phase 2 coding together provide descriptive information about both the start of a support interaction as well as the response to the support initiation. Because Phase 1 coding identified "continuation clips" that were part of a single interaction that spread across more than one video clip, I was able to examine support behaviors at the *clip level* as well as *unique support interactions* that included continuation clips. Please see Figure 1 for an example of how Phase 1 and Phase 2 coding result in unique support interactions.

Piloting, Training, and Inter-rater Reliability

Discussion of how the coding system was developed and piloted, the training of coders, and the coding procedure for dissertation coding is presented below.

Pilot/Training Coding

A team of four coders (SW and three undergraduate research assistants; 3 female and 1 male) was involved in the development and piloting of the manualized coding system on couple video for the two CELF families headed by same-sex couples (who were not included in the official coding for the dissertation). The manual was continually refined, and weekly team meetings provided the opportunity for in-depth discussion of the data and the codes. All coding discrepancies were reconciled through team meetings that contributed to the development of the coding manual. Pilot data for social support coding are presented in Appendix Table B1. No instances of capitalization were identified during piloting.

A team of 9 coders (SW and 8 research assistants; 2 of the research assistants were from the original piloting and development team; 7 female and 2 male) was recruited and intensively trained on formal coding for the dissertation.[3] Training included a combination of instructional meetings with SW to discuss concepts and procedures, and active training coding assignments on

[3] It should be noted that a total of 12 research assistants started the training process. However, 4 of these research assistants either failed to complete the training process or completed the training process but did not achieve high enough levels of reliability to continue on the project.

which inter-rater reliability analyses were computed. Training coding assignments were completed on the two pilot families. Coders would complete a coding assignment and submit their data for inter-rater reliability analysis, and then meet with SW for feedback and to discuss discrepancies and coding questions before moving onto the next coding assignment. In total, coders coded 367 clips from the two pilot families over an 8-week training period. Inter-rater reliability was calculated using Cohen's kappa because the data are all categorical in nature; kappas are reported as ranges to represent scores across all combinations of judges (see Appendix Table B2). The reported ranges, medians, and means are based on kappas that were able to be computed. Because there were instances in which kappa could not be computed (due to coders not using the same sets of score response; Coder A codes "negative" anchor quality but Coder B never does), percent agreement was also calculated. For whether a support anchor was identified, percent agreement was calculated as the number of agreements over the total number of clips. For all subsequent codes, percent agreement was calculated as the number of agreements over the number of clips in which both coders agreed that a support anchor took place. Keeping in mind that these naturalistic video are nuanced and contain much more "noise" than prompted interactions in the laboratory, the inter-rater reliability data from the training phase provide evidence that this coding system for marital support interactions could be reasonably learned and consistently applied by the 9 coders on the team.

Dissertation Coding

To further enhance the accuracy and quality of the coding, the procedure for the video coding used in the dissertation entailed that two coders separately coded each video clip and then met and reconciled their discrepant codes. Coders were rotated in their pairings so that each one was regularly matched with different partners. Coder pairs brought any remaining coding

disagreements to weekly team meetings to consult with SW and other team members. *The finalized codes agreed upon by each pair of coders were used in analyses.* Inter-rater reliability was calculated prior to the reconciliation process (see Table 3). Results are shown as a range of kappas and percent agreements at the level of coder pairs, as well as an overall kappa and percent agreement calculated across all coder pairs. Overall kappas for social support coding were generally above .70, with overall percent agreements even higher at above 90%. The one exception is an overall kappa of .52 on Context Quality, a relatively low kappa that stands in contrast to the much higher mean kappa of .85 (i.e., the average of the coder pair kappas). The magnitude of the overall kappa was reduced by the inclusion of data from instances of non-computable kappas at the pair-level (i.e., due to coders not using the same set of score responses). The percent agreement, on the other hand, remains unaffected and suggests high coder agreement at 91% that corroborates the .85 mean kappa across coder pairs.

No inter-rater reliability data are presented for capitalization interactions given their low base-rate. As the rarity of observing capitalization became apparent during the coding effort, it became the team procedure for all coders to bring in any potential instances of capitalization behaviors for discussion as a full team (and not just with their coding partner) in order for the full team to have broad exposure to these interactions. Thus, the codes for all capitalization interactions were presented to and agreed upon by all member of the team. A section briefly reporting on capitalization findings appears at the end of the Results section.

Calculation of Couple-Level Variables

Various couple-level proportions were computed and used to address research questions about couple support behavior. All couple-level proportions are listed and described in Table 4.

Overall Supportiveness is a couple-level variable that describes the rate of support interaction occurrence based on the total number of couple clips for each couple. This proportion represents the rate of support out of all times a couple was observed together, regardless of how the support was initiated (solicited, offered, acknowledged), the quality of the support (positive/neutral, negative, ambiguous/mixed), and the type of support (instrumental, emotional).

To generally describe rates of a couple's supportive behaviors, basic couple-level proportion variables were computed in two ways. First, proportions of *all* coded support variables were calculated based on the number of potentially supportive interactions for each couple. These are called Support Interaction Proportion Variables. For example, the Support Interaction Proportion for Solicited Support answers the question: What proportion of a couple's supportive interactions were initiated by a solicitation of support? Second, proportions of *all* coded support variables were calculated based on the total number of couple clips per couple to represent rates of support behaviors out of all 30-second clips in which couples were observed together. These proportions are termed Couple Together Proportion Variables. For example, the Couple Together Proportion for Solicited Support answers the question: Given that a couple was together, at what rate did they solicit support?

These two categories of variables provide different kinds of information about the amount of support occurring at the couple-level. For example, Couple A and Couple B may each show Solicited Support in *5% of their couple clips* (i.e., the Couple Together proportions for the Solicited Support variable). However, depending on how many support interactions there were for each couple, the 5% could translate into Solicited Support occurring in *70% of all support interactions* for Couple A (for which there were relatively few support interactions), but *30% of all support interactions* for Couple B (for which there were many more support interactions). In

this example, the difference between the Couple Together Proportion of 5% and the Support Interaction Proportions of 70% and 30% is notable.

In addition, to examine sex differences in specific support variables, scores representing rates of support behaviors were also computed for husbands and wives separately. A total of six Husband (Wife) Support Proportion Variables were computed (three for husbands and three for wives): Received Support, Solicited Support, and Offered Support based on the number of support interactions for each couple. These proportions address the question: What was the probability of support Received (or Solicited or Offered) by a husband (or a wife) given that a support interaction occurred?

The twelve Husband (Wife) Support-Type ProportionVariables (nine for husbands and nine for wives) represent the rates of Instrumental Support (versus Emotional Support) that was Received, Solicited, and Offered by a husband (or by a wife) based on two different categories of denominators. First, proportions were computed based on the number of support interactions for each couple, providing rates given that support occurred for that couple. Second, proportions were computed based on the number of Received, Solicited, and Offered support interactions for that member of the couple, providing rates that describe the probability that supported received (or solicited or offered) by a husband (or a wife) would be Instrumental Support.

The four Husband (Wife) Support-Initiation Proportion Variables represent the rate of husband (wife) support solicitations and offers based on that couple's total number of 30-second couple clips. The four scores describe the probability of a husband-solicitation, a wife-solicitation, a husband-offer, and a wife-offer of support given that a couple was observed together, providing information about how husbands and wives initiated support with their spouses when they were together.

Results

Study 1 aimed to provide a comprehensive descriptive behavioral analysis of marital support interactions as they occur in everyday contexts outside the structure of the laboratory. Descriptive analyses of support interactions were conducted using frequencies, proportions, chi square tests of independence, and correlations. The overall research question, "What does marital support look like in everyday life?" was addressed at two levels: 1) The level of the individual support behavior; and, 2) The level of the couple.

Support at the Level of the Individual Support Behavior

I examined frequencies and proportions of the support variables at the level of the individual behavior in two ways. First, I examined frequencies and proportions of the variables based on *clips*, that is, the number of 10-30 second couple clips (N = 10,030 clips) derived from the culling and slicing of the video. Second, I examined frequencies and proportions of the variables based on *support interactions*, that is, the number of discrete support interactions (N = 356 interactions) accounting for continuations of interactions across clips.

Research Question #1: What is the rate of different support behaviors given that a couple was observed together? Table 5 presents the frequencies and proportions of the variables based on *couple clips*. Support anchors were identified in a very small proportion of clips (4%; n = 432); thus, support as explicitly coded by this coding system appears to be just a small component of everyday marital interaction. Of those 432 support clips coded across 4 days of observation for 30 couples, 17% (n = 76) were continuation clips in which the support interaction extended beyond 30 seconds and was coded in a subsequent or previous clip (or clips); this variable serves as a rough approximation of interaction duration and suggests that about 4/5 of

support interactions were brief (i.e., under 30 seconds). The vast majority of support clips (96%, n = 417) had instances of support that were *not* instigated by a child, despite the fact that children were present in the home during the time these couples were together. With regard to gender and support roles, the majority of support clips showed the wife receiving support from the husband (66%, n = 285). Support was more often solicited by the receiver (69%, n = 300) or else offered by the provider (29%, n = 126). Support was coded because it was acknowledged by the receiver in only 6 clips. Instrumental support clips predominated over emotional support clips (77% vs 23%, n = 331 vs. 98), and there were only 3 instances where the support adopted qualities of both. We were able to find the context – that is, how the support initiation (i.e., solicitation or offer) was responded to – in almost all support clips (90%; n = 387).

Support almost always had a positive or neutral tone, both in terms of the support anchor (94%, n = 404) and context (87%, n = 336) [negative quality (1% and 5%, n = 6 and 20, respectively) and mixed quality (5% and 8%, n = 22 and 31, respectively)]. The pattern of primarily positive support anchors and contexts was observed regardless of how support was initiated (solicited or offered; see Appendix Table B3) and what type of support was observed (instrumental or emotional; see Appendix Table B4).

Research Question #2: What is the rate of different support behaviors given that a support interaction occurred? The next set of frequencies and proportions are based on *support interactions*, accounting for the fact that support sometimes extended beyond the 30 second timeframe for the clips. The dataset was reorganized so that "continuation clips" – clips in which the coded support was part of an ongoing support interaction that began and was coded in a prior clip – were combined with the initial clip in which the support interaction began. Thus, the dataset of 432 anchor clips was reconfigured to represent 356 unique support interactions

across 4 days of observation for 30 couples. As shown in Table 6, of those 356 support interactions, only 4% (n = 14) were instigated by a child, and in the majority of interactions, wives were the receivers of support from husbands (66%, n = 234). Support continued to be solicited most often (68%, n = 243), then offered (31%, n = 109), and last were rarely acknowledged (1%, n = 4). Instrumental support was by far most commonly observed in the interactions (81%, n = 289) followed by emotional support (18%, n = 64). The context was observed in the majority of interactions (90%; n = 319).

Continuing the pattern of positive quality demonstrated at the level of individual clips, support interactions were also principally positive both with regard to anchor quality (95%, n = 337) and context quality (85%, n = 271). This pattern held across the different methods by which support was initiated (solicited or offered; see Appendix Table B5) and what type of support was observed (instrumental or emotional; see Appendix Table B6).

In total, these descriptive analyses of marital support behaviors – both at the level of the clip as well as at the level of the interaction – reveal several interesting findings regarding the nature of marital support in the everyday interactions of heterosexual couples. First, supportive interactions (as defined by this research) comprised only a small component of couples' daily interactions or times observed together; thus, marital support was relatively rare. When support was observed, the vast majority of the interactions were brief, lasting less than 30 seconds. Second, more support was received by wives than by husbands. Third, support was predominantly initiated through solicitations by the Support Receiver; although offers of support by the Support Provider were also observed, acknowledgments of support by Support Receivers were very rarely coded. Fourth, the large majority of the supportive interactions were instrumental in nature, compared to emotional. And last, there was clear evidence to show that

the supportive interactions coded in this study were overwhelmingly positive or neutral in terms of emotional quality, both with regard to how the support emerged as well as how it was responded to. This pattern of positivity did not change meaningfully depending on the type of support (instrumental or emotional) or manner of initiation (solicitation or offer) in question.

Research Question #3: Are there patterns in the co-occurrences of certain support behaviors? RQ3 takes an exploratory approach to examine whether certain aspects of support are more likely to occur with other aspects of support. Chi Square Tests of Independence and Fisher's Exact Probability Tests were used to examine patterns in the co-occurrences of the eight marital support variables based on the 356 unique support interactions (see Table 7). Because all tested patterns comprised 2X2 contingency tables (yielding df = 1), the Yates Chi Square (that is corrected for continuity) was used instead of a Pearson Chi Square. For significant chi square tests, percentage deviation statistics[4] (corrected for continuity) were used to illustrate the patterns among the frequencies of the variables, and represents the degree to which an observed chi-square cell frequency differed from the value that would be expected on the basis of the null hypothesis. Thus, a percentage deviation of +20% for a cell indicates that the observed frequency was 20% greater than expected by chance, while a percentage deviation of -20% indicates that the observed frequency was 20% less than expected by chance. I aggregated or dropped response categories that yielded small frequencies[5].

[4] I used the online program offered by VassarStats http://faculty.vassar.edu/lowry/newcs.html in computing the Yates Chi Square and percentage deviation statistics. The formula for percentage deviation corrected for continuity was: [(observed – expected) – 0.5 / expected) X 100]. A positive sign was given to values when observed > expected, and a negative sign was given to values when expected < observed.

[5] For support initiation analyses, I dropped acknowledged support given its limited number (n = 4) and only tested patterns with solicited (n = 243) and offered support (n = 109). Also, the both instrumental and emotional support category (n = 3) was dropped from support type analyses for the same reason, leaving emotional support (n = 64) and instrumental support (n = 289). For anchor quality and context quality, I combined the negative and mixed categories to create a negative/mixed category that reflected any negative quality in an interaction (n = 17 for anchor, n = 48 for context) to be compared with positive/neutral quality in an interaction (n = 339 for anchor, n =

In instances where a cell frequency was lower than 5 – a violation of requirements for a valid chi square test – Fisher's Exact Probability Test was used instead. This non-parametric test does not produce a test statistic but does produce a p-value. For significant Fisher's Exact Probability Tests, frequencies drawn from the contingency table data were then used to produce prevalence rates that illustrate the significant patterns.

As shown in the first column of Table 7, there were no differences between the frequencies of support behaviors observed on a weekday or weekend.

Second, analyses examined whether there were patterns in support behavior frequencies depending on whether the interaction included continuation clips (i.e., whether the interaction continued across more than 1 clip). Two significant patterns were found out of the 7 patterns that were tested. The frequency of support type (instrumental versus emotional) differed by continuation clip status, $\chi^2(1, N = 353) = 19.37$, $p < .0001$, such that emotional support was coded more often in continuation clip interactions (i.e., longer interactions; +131.9%) but less often in non-continuation clip interactions (i.e., shorter interactions; -18.8%) than would be expected by chance. Instrumental support, on the other hand, was coded less often in continuation clip interactions (i.e., longer interactions; -29.2%) than would be expected by chance, with no strong pattern in non-continuation clip interactions (+4.2%). This suggests that emotional support tended to be longer in duration, whereas instrumental support was transacted in shorter amounts of time (i.e., < 30 seconds). In addition, the frequency with which the context was found versus not found differed by continuation clip status ($p < .05$, Fisher's Exact Probability Test). There were fewer unidentifiable contexts when the interaction was longer

271 for context). Last, I combined all the different "context not found" categories (n = 26 for not observed, n = 7 for no opportunity, n = 4 for technical difficulties) to reflect all interactions in which the context was not identified and therefore unable to be coded (n = 37), in contrast to interactions where the context was found and coded (n = 319).

(1/44 = 2%) than when the interaction was shorter in duration (36/275 = 13%). Thus, responses to support initiations were more often observed when interactions were longer in duration.

Third, I examined whether support behavior frequencies differed depending on which member of the couple was in the Receiver role (husband-receiver versus wife-receiver). One of the 7 tests resulted in a statistically significant finding: the receiver role was related to how the supportive interaction was initiated (solicited versus offered), $\chi^2(1, N = 352) = 13.31$, $p < .001$. Support was more likely to be offered (+40.1%) and less likely to be solicited (-18%) when husbands were the receivers; when wives were the receivers, the support was less likely to be offered (-21%) but more likely to be solicited (+9.4).

The fourth set of analyses tested whether frequencies of support behaviors differed depending on how the support was initiated (solicited versus offered), yielding two out of seven significant findings. Support type (instrumental or emotional) was found to differ by support initiation, $\chi^2(1, N = 353) = 5.00$, $p < .05$, such that emotional support was more likely than would be expected by chance to be solicited (+17.0%) and less likely than would be expected by chance to be offered (-37.5%), whereas instrumental support was more likely to be offered (+8.4%) and less likely to be solicited (-3.8%) than would be expected by chance alone. In addition, as reported above, support was more likely to be offered by husbands and solicited by wives.

Fifth, I examined whether support behavior frequencies differed by the type of support (instrumental versus emotional). Two significant patterns were reported above: instrumental support interactions tended to be briefer and emotional support interactions longer, and emotional support was more likely to be solicited and instrumental support more likely offered.

Sixth, two sets of chi squares tested the associations between frequencies of support behaviors and the quality of the anchor (positive/neutral versus negative/mixed) as well as the

quality of the context (positive/neutral versus negative/mixed). Recall that anchor quality and context quality were overwhelmingly positive in nature, and there were very few cases of negative or mixed quality codes. There were no significant patterns of the 7 tested.

Last, chi squares tested whether support behavior frequencies differed according to whether the context (i.e., response to support initiation) was found. As reported above, the context was more likely to be observed when interactions were longer in duration.

Sex differences in patterns of support solicitations and offers. Chi Square Tests of Independence and Fisher's Exact Probability Test were also used to examine sex differences in patterns of marital support behaviors (see Table 8). Specifically, I examined how support behavior was linked to the sex of the Solicitor and the sex of the Offerer. Given prior work suggesting that women prefer emotional support whereas men prefer instrumental support (e.g., Cutrona, 1996; Matud, 2004), I was specifically interested in the patterns between the sex of the initiator, the manner in which support was initiated, and *the type of support transacted*. Of the 243 interactions in which support was solicited by a spouse (68% of all support interactions), husbands were the Solicitor in 28% (68/243). Findings show that support type (instrumental versus emotional) depended on the sex of the Solicitor, $\chi^2(1, N = 240) = 4.37$, $p < .05$, such that husband solicitations of emotional support were more frequent (+41.2%) and their solicitations of instrumental support were less frequent (-11.4%) than would be expected by chance. On the other hand, wife solicitations of instrumental support were more frequent (+4.4%) and their solicitations of emotional support were less frequent (-16.0%) than would be expected by chance alone. Husbands solicited 25% of all instrumental support interactions (compared to 75% for wives), but 40% of all emotional support interactions (compared to 60% for wives). None of the other 13 tests of sex differences in solicited support interactions and offered support interactions

revealed different patterns of support behavior for men and women. These findings counter prevailing notions about sex differences in preferences for different kinds of support, showing husband solicitations of emotional support were more frequent than expected, although overall wives solicited emotional support more often than husbands did.

In summary, findings demonstrate several notable patterns in the types of support behavior that are linked with one another. First and foremost, support was more likely to be offered when husbands were receivers, but more likely to be solicited when wives were receivers, than would be expected by chance alone. Additionally, emotional support was more likely to be solicited and longer in duration, whereas instrumental support was more likely to be offered and shorter in duration, than would be expected by chance. For the most part, support behavior generally did not seem to differ depending on whether it was the husband or the wife who was the Offerer or the Solicitor. However, husband solicitations of support were more likely to be emotional in nature, whereas wife solicitations of support were more likely to be instrumental in nature, than would be expected based on chance alone.

Support at the Level of the Couple

The remaining set of analyses addressed supportive behaviors at the level of the couple, shifting the focus away from the individual support behavior as the unit of analysis to a focus on how those behaviors or interactions are transacted by husbands and wives within the couple as the unit of analysis. Recall that different types of couple proportions variables were computed: Couple Together Proportion Variables (based on the number of clips in which couples were observed together for each couple), Support Interaction Proportion Variables (based on the number of support interactions observed for each couple), and proportions that were calculated separately for the husbands and wives in each couples.

Research Question #4: What does marital support behavior look like at the couple level?

Descriptive statistics for frequencies of interactions at the couple level are presented in Table 9. For the average couple, 12 supportive interactions were observed (M = 11.87, SD = 6.69). Of those 12 interactions, the husband was the Receiver of the support in about 4 interactions (M = 4.07, SD = 2.29) and the wife was the Receiver in about 8 interactions (M = 7.80, SD = 6.64). Support was mostly initiated through solicitations (M = 8.07, SD = 5.90), and was primarily instrumental (M = 9.63, SD = 5.35). In those 12 interactions, support was overwhelmingly initiated (M = 11.23, SD = 6.45) and responded to (M = 9.03, SD = 4.87) in a positive manner.

When looking at the Support Interaction Proportions based on the *number of support interactions that were observed for each couple* (see Table 10), on average, the wife was the Receiver of the support in 59% (SD = .23) and the husband was the Receiver of the support in 41% (SD = .23) of the couple support interactions. The variability among couples (range 6% - 80% for Husband-Receiver; range 20% - 94% for Wife-Receiver) demonstrates a wide range across couples in the proportion of support received by husbands and by wives. In addition, support was much more often Solicited (M = .64, .SD = .19) and Offered (M = .35, SD = .19), than Acknowledged (M = .01, SD = .02). The ranges of proportions for Solicited (range 0 – 100%) and Offered (range 0 – 100%) support show incredible variability among couples with regard to how support was initiated. Instrumental support accounted for a much greater proportion (M = .82, SD = .18) of couple support interactions than emotional support (M = .17, SD = .18) or support that was both instrumental and emotional in nature (M = .01, SD = .02). There was also a good deal of variability across couples regarding the type of support that was observed (range 40% - 100% for Instrumental; range 0% - 60% for Emotional). Positive anchor quality (M = .95, SD = .09) and context quality (M = .86, SD = .14) comprised the vast majority

of each couples' support interactions. On average, the context was observed and coded in the great majority of marital interactions for each couple (M = .91, SD = .10).

Research Question #5: Are there sex differences in behavior during couple support interactions? Next, I tested the Support Gap Hypothesis (e.g., Belle, 1982; Cutrona, 1996) which posits that men receive more support than women due in part to women being socialized to offer more support. First, paired samples *t*-tests using proportions based on the *number of support interactions per couple* compared husbands and wives on the proportion of Received support, as well as on the proportions of support initiated through Solicitations and Offers. Table 11 presents all findings. Results counter the Support Gap Hypothesis; wives (M = .59, SD = .23) were the support receivers at a significantly higher rate than husbands (M = .41, SD = .23), $t(29) = -2.05$, $p < .05$. Findings also show that wives solicited significantly higher rates of support from husbands than husbands did from wives (M = .42 and SD = .24 vs. M = .22 and SD = .16; $t(29) = -3.17$, $p < .01$). There were no sex differences on offers of support (M = .20 and SD = .18 vs. M = .16 and SD = .12; $t(29) = -.93$, *NS*). Second, paired samples *t*-tests using proportions based on the *number of couple clips per couple* found similar results, with wives being the receivers (M = .03, SD = .02) and solicitors of support (M = .02, SD = .02) at higher rates than husbands (M = 02 and SD = .01, $t(29) = -2.45$, $p < .05$; and M = .01 and SD = .01, $t(29) = -2.88$, $p < .01$, respectively); no sex differences were found for offers of support (both M = .01 and SD = .01; $t(29) = -.39$, *NS*). Thus, findings counter the Support Gap Hypothesis and show that wives receive significantly greater proportions of support from husbands than husbands do from wives. Additionally, this difference seems to be due to wives *soliciting* more support from husbands, rather than husbands offering more support.

I also tested whether husbands and wives differed in the kinds of support that they received, solicited, and offered to their partners, specifically examining whether husbands provide more instrumental support and wives provide more emotional support according to the Support Gap Hypothesis (see Table 12). A series of paired samples *t*-tests examined whether the rates of Instrumental Support (versus Emotional Support) differed between husbands and wives across instances of Received, Solicited, and Offered Support. Two different sets of Husband (Wife) Support-Type Proportion Variables were computed to examine sex differences at differing levels of specificity. First, proportions based on the number of *overall support interactions for each couple* indicate that when a support interaction occurred, wives (M = .52, SD = .21) received a greater proportion of instrumental versus emotional support compared to husbands (M = .31, SD = .18), $t(29) = -3.30$, $p < .01$). Wives (M = .36, SD = .22) were also more likely than their husbands (M = .14, SD = .13) to solicit instrumental versus emotional support, $t(29) = -3.94$, $p < .001$); there were no sex differences on offers of instrumental support, $t(29) = -0.49$, *NS*. Second, I examined proportions based on denominators adjusted for the number of *received, solicited, and offered support interactions for husbands and for wives*. When they received support, husbands were more likely to be the recipients of emotional support versus instrumental support (M = .21, SD = .24) compared to wives (M = .10, SD = .18; $t(29) = -2.14$, $p < .01$). Similarly, a marginally significant difference shows that when husbands solicited support, they were more likely to solicit emotional support from their wives (M = .28, SD = .31) compared to the likelihood that wives solicit emotional support from their husbands (M = .13, SD = .20; $t(29) = -1.96$, $p < .10$). On the other hand, a marginally significant finding shows that when wives offered support, they were more likely to offer emotional support to their husbands (M = .10, SD = .21) compared to the likelihood that husbands offer emotional support to their

wives (M = .04, SD = .14; $t(29) = 1.81$, $p < .10$). Thus, findings shed new light on prevailing theories in the literature regarding sex and support type preferences, and indicate that husbands were more likely than wives to receive emotional support versus instrumental support and wives were more likely than husbands to receive instrumental support versus emotional support. This result seemed driven by husbands being more likely to solicit emotional support (and less likely to solicit instrumental support), and wives being more likely to offer emotional support (and less likely to offer instrumental support) than husbands.

To summarize, analyses provide strong evidence countering the Support Gap Hypothesis. Rather than husbands receiving more support from wives than wives do from husbands, I found the opposite pattern: wives receive more support from husbands than husbands do from wives, a finding that appears driven specifically by wives soliciting more support from husbands. In addition, countering the notion that wives prefer emotional support and husbands prefer instrumental support, wives received a greater proportion of instrumental support from husbands than husbands did from wives, and husbands received a greater proportion of emotional support from wives than wives did from husbands. Two factors contribute to this pattern: husbands were more likely to solicit emotional support (and less likely to solicit instrumental support), and wives were more likely to offer emotional support (and less likely to offer instrumental support).

Linkages Among Support Behaviors at the Level of the Couple

Linkages among various support behaviors at the level of the couple were examined through correlations and partial correlations using Couple Together Proportion Variables that were computed based on the total number of couple clips per couple. Descriptive information for Couple Together Proportion Variables is presented in Table 13.

Eleven research questions are addressed in this section. The first 8 questions (RQ6 – RQ13) are systematically grouped into pairs of questions that aim to understand how specific support behaviors are related with one another as well as with other support characteristics. Couple Together Proportion Variables are used for these analyses. The first question of each pair (RQ6, RQ8, RQ10, RQ12) explores whether there is an association between two specific support variables related to a single support concept that was coded; for example, out of all the time that they were observed together, is the husband's rate of support receipt linked with the wife's rate of support receipt, and is the rate of support solicitations linked with the rate of support offers? Zero-order correlations were used to examine these associations.

The second question of each pair addresses whether the two support variables examined in the first question are linked with other characteristics of support. To test these questions, partial correlations controlled for the Overall Supportiveness variable[6] (i.e., rate of support interaction occurrence given that a couple was together), since a couple's overall supportiveness is a component of all of the coded variables. For example, a couple with a high rate of supportive interactions will also have high rates of codes for who the receiver was (husband-receiver or wife-receiver), how the support was initiated (solicited or offered), the type of support (instrumental or emotional), and so forth. Controlling for the Overall Supportiveness variable addresses this confounding factor, and essentially standardizes the correlations for those variables in which one of two possible codes was applied (e.g., husband-receiver versus wife-receiver, solicited versus offered, instrumental versus emotional)[7]. This correction results in correlations of similar effect sizes but in opposite directions for those variables. Table 14

[6] The Overall Supportiveness variable shows variability across couples with M = .04, SD = .03, and range .01 - .11.
[7] Partial correlations of Couple Together Proportion Variables controlling for the Overall Supportiveness variable show the following perfect (and near perfect) inverse associations: Husband-Receiver and Wife-Receiver, partial r = -1.00; Solicited and Offered, partial r = -.99; Instrumental and Emotional, partial r = -1.00.

presents the partial correlations among the six Couple Together Proportion Variables. Only one set of proportions from each coding category is presented given that the results for different codes in each category (e.g., solicited support and offered support are codes in the support initiation category) reveal associations that share the same link but in opposite directions. Specifically, husband-receiver (and not wife-receiver) correlations are shown for the receiver category, solicited support (and not offered support) correlations are shown for the support initiation category, instrumental support (and not emotional support) correlations are shown for the support type category, and positive support (and not negative support) correlations are shown for the anchor and context categories.

Last, the final three research questions (RQ14, RQ15, RQ16) address how different categories of husband and wife initiations of support are linked within couples, and examine zero-order correlations among the Couple Together Proportion Variables representing husband-offers, husband-solicitations, wife-offers, and wife-solicitations of support. Table 15 presents a four-by-four correlation matrix depicting the different associations.

RQ6 and RQ7 concern proportions of support that were received by husbands and by wives. RQ6 is based on findings from daily report research suggesting that among couples in which one spouse receives a high rate of support, the other spouse also tends to receive a high rate of support (Lawrence et al., 2008). RQ7 focuses on associations between proportions of received support by husbands and other aspects of support.

Research Question #6: Within a couple, is there an association between the proportion of support received by a husband and the proportion of support received by a wife? I examined the zero-order correlation between proportions of husband-received support and wife-received support to address whether the amount of support received by husbands and wives in a couple

are associated. In other words, are couples typified by one spouse receiving more support than the other, or are the proportions of support received by husbands and wives positively linked? The resulting non-significant association ($r(28) = .17$, *NS*) indicates that the rate of support received by one spouse does not appear to be associated with the rate of support received by the other spouse. Accordingly, there doesn't seem to be evidence for "high support" couples in which there is simply more exchanges of support benefitting both spouses, or "low support" couples in which little support receipt by husbands is matched by little support receipt by wives.

Research Question #7: Is the sex of the partner who receives the most support linked with other characteristics of support interactions in a couple? One significant and one marginally significant partial correlation out of the five tested (that controlled for the overall supportiveness variable) in the first column of Table 14 indicate that characteristics of support interactions in a couple were linked to the sex of the partner who tended to receive the support. First, the significant negative association between proportions of husband-receiver and solicited support (partial $r(27) = -.58$; $p \leq .001$) indicates that couples characterized by higher rates of solicited support tended to have lower rates of husbands receiving support (and higher rates of wives receiving support; partial $r(27) = .58$; $p \leq .001$), whereas couples in which there are higher rates of offered support tended to have higher rates of husbands receiving support (partial $r(27) = .59$; $p \leq .001$) but lower rates of wives receiving support (partial $r(27) = -.59$; $p \leq .001$). Second, the marginally significant negative association between proportions of husband-receiver support and positive context quality (partial $r(27) = -.31$; $p \leq .10$) shows that couples in which husbands received proportionately greater support also had proportionately fewer positive responses to support initiations, whereas couples with higher rates of wife-receiver support tended to have more positive responses to support initiations (partial $r(27) = .31$; $p \leq .10$).

RQ8 and RQ9 involve proportions of support solicitations and support offers. RQ8 asks whether rates of support solicitations and offers are associated. RQ9 asks whether rates of support solicitations are associated with other characteristics of support interactions.

Research Question #8: Within a couple, is there an association between rates of support solicitations and support offers? A significant positive zero-order association between the proportions of solicited support and offered support ($r(28) = .51$, $p \leq .01$) suggested that couples in which there were higher rates of solicitations tended to also experience higher rates of offers. In other words, couples were not characterized by one method of support initiation only; couples who showed high rates of one method also tended to show high rates of the other method.

Research Question #9: Are rates of solicited support and offered support within a couple linked with other characteristics of their support interactions? Two significant partial correlations out of the five tested (that controlled for the overall supportiveness variable) indicated that some characteristics of support interactions in a couple are associated with the manner in which support tends to be initiated (solicited support or offered support; please see Table 14). First, as described earlier for RQ7, couples in which husbands tend to receive more support also had higher rates of offered support (partial $r(27) = .59$, $p \leq .001$), whereas couples in which wives tend to receive more support had higher rates of solicited support (partial $r(27) = .58$, $p \leq .001$). Second, proportions of instrumental support are negatively linked with proportions of solicited support (partial $r(27) = -.39$, $p \leq .05$). Couples with high rates of emotional support, on the other hand, tend to have high rates of support solicitations (partial $r(27) = .36$, $p \leq .10$) and low rates of support offers (partial $r(27) = -.41$, $p \leq .05$).

RQ10 and RQ11 focus on proportions of instrumental support and emotional support. RQ10 asks whether rates of instrumental support and emotional support are positively correlated

within couples. RQ11 asks whether the rate of instrumental support is associated with other characteristics of support interactions.

Research Question #10: Within a couple, is there an association between rates of instrumental support and emotional support? A non-significant zero-order correlation between proportions of instrumental support and emotional support ($r(28) = -.18$, *NS*) indicated that rates of the two types of support were not related.

Research Question #11: Are rates of instrumental support and emotional support within a couple linked with other characteristics of their support interactions? Three significant partial correlations out of the five tested in Table 14 (that controlled for the overall supportiveness variable) suggested that some characteristics of support interactions in a couple were associated with the rate at which instrumental support tended to be transacted. First, as discussed earlier for RQ9, rates of instrumental support were negatively linked with rates of solicited support (partial $r(27) = -.39$, $p \leq .05$), whereas couples with high rates of emotional support tended to have low rates of offered support (partial $r(27) = -.41$, $p \leq .05$). Second, proportions of instrumental support were also negatively linked with the proportions of support that involved continuation clips (partial $r(27) = -.39$, $p \leq .05$), while rates of emotional support were positively associated with rates of continuation clips (partial $r(27) = .40$, $p \leq .05$). This pattern indicates that couples in which instrumental support was transacted at higher rates tended to also have support interactions of shorter duration (i.e., less than 30 seconds); alternatively, couples that had more emotional support interactions were inclined to have support interactions of longer duration. Last, rates of instrumental support were positively associated with rates of positive context quality (partial $r(27) = .38$, $p \leq .05$), suggesting that couples who have more instrumental support interactions tended to also experience more positive responses to support initiations.

The next pair of questions addresses proportions of positive support and negative support within a couple. RQ12 asks whether the rate of positive anchor quality (and positive context quality) was inversely associated with the rate of negative anchor quality (and negative context quality). Inverse associations would indicate that as rates of positive quality increase, the rates of negative quality decrease, suggesting that couples are characterized primarily by one type of support interaction quality. RQ13 then inquires about possible linkages between the rate of positive support and other characteristics of support interactions.

Research Question #12: Within a couple, is there an association between rates of positive support and negative support? There was a non-significant zero-order association between rates of positive anchor quality and negative anchor quality ($r(27) = -.19$, *NS)*; however, rates of positive context quality and negative context quality were strongly negatively correlated ($r(27) = -.77$, $p \leq .001$). Thus, it was not the case that couples typified by more positive support initiations tended to have fewer negative support initiations. However, there was a strong inverse association between positive and negative context quality for responses to support initiations. It should be noted that anchors were overwhelmingly coded as having positive quality, limiting the amount of variance in the proportions. For the average couple, 95% of all support interactions had a positive anchor quality (range 71% to 100%). Context quality, on the other hand, had a greater percentage of negative codes (14% in the average couple, range 0 to 50%).

Research Question #13: Are rates of positive and negative support interactions within a couple linked with other characteristics of their support interactions? Table 14 presents a series of non-significant partial correlations (that controlled for the overall supportiveness variable) between positive anchor quality and other aspects of support. Thus, couples that tended to initiate support in a more positive manner did not differ in their support behaviors compared to couples

who tended to initiate support in a more negative manner. As discussed earlier, this may be due to restricted range in the couple-level proportions of positive support anchors. For positive context quality, on the other hand, two associations emerged. First, as discussed for RQ7, couples for whom responses to support initiation (i.e., context quality) tended to be positive had lower rates of husband-receiver support (partial $r(27) = -.31$, $p \leq .10$), but higher rates of wife-receiver support (partial $r(27) = .31$, $p \leq .10$). Second, as presented for RQ11, the couple-level proportion of instrumental support was positively associated with the proportion of positive context quality (partial $r(27) = .38$, $p \leq .05$), whereas emotional support was negatively associated with positive context quality (partial $r(27) = -.36$, $p \leq .10$). This suggests that high-instrumental support couples tended to respond more positively to support initiations while high-emotional support couples tended to respond more negatively to support initiations. In sum, findings suggest that couples high on positive responses to support initiation – couples that were inclined to respond positively to solicitations for support and couples that were inclined to graciously accept offers of support – also tended to be characterized by higher rates of wives being the receivers of support and higher rates of instrumental support.

The final set of questions addresses how different methods of initiating support (offers versus solicitations) by husbands and by wives are linked within couples. First, I explored between-spouse associations to examine whether husbands and wives tended to use the same type of support initiation strategy as their partner; are couples characterized by partners offering support at similar rates and soliciting support at similar rates? Second, I examined within-spouse associations to test whether different methods of support initiation were correlated within the same person; does a husband (or a wife) tend to use the two strategies at similar rates? Last, I tested whether, within a couple, solicitations of support by one spouse was linked with offers of

support by the partner, thus consistently benefiting one member in the Receiver role. Table 15 presents zero-order correlations that examined linkages among the Husband (Wife) Support-Initiation Rate Variables: husband-offers, husband-solicitations, wife-offers, wife-solicitations.

Research Question #14: Are rates of offers (and solicitations) correlated between husbands and wives? While rates of husband-solicitations and wife-solicitations of support were not linked ($r(27) = -.19$, *NS*), rates of husband-offers and wife-offers of support were significantly associated ($r(27) = .38$, $p < .05$). Thus, more offers of support by one spouse begat more offers of support by the other spouse. This finding was not shown for solicitations of support, and in fact, the non-significant negative association hints that a higher rate of solicitation by one spouse inhibits solicitation of support by the other spouse.

Research Question #15: Are rates of offers and solicitations correlated within husbands (and wives)? Rates of husband-solicited support and husband-offered support were strongly positively associated ($r(27) = .50$, $p < .01$), whereas rates of wife-solicited support and wife-offered support shared a non-significant association ($r(27) = .11$, *NS*). This pattern of findings suggests that within couples, husbands who tended to solicit support at higher rates tended to also offer support at higher rates; this was not true of the wives.

Research Question #16: Is a partner's rate of support initiation (solicitations, offers) linked with his/her spouse's rate of the other mode of support initiation (solicitations versus offers)? Correlations show that a greater proportion of husband-solicitations was positively linked with a greater proportion of wife-offers ($r(27) = .41$, $p < .05$). This association was not significant for wife-solicitations and husband-offers of support ($r(27) = .25$, NS), although the link is in the positive direction. The pattern of findings suggests that within couples, when

husbands solicit support at higher rates, their wives offer support at higher rates as well, thus consistently benefiting the husbands as the Receivers of support.

Summary

Correlational analyses revealed interesting patterns of linkages and non-linkages among different types of support behaviors exhibited within couples. There was no evidence the rates of support received by husbands and by wives were strongly linked within couples; thus, couples did not appear to be "high support" or "low support" couples in which husbands and wives tend receive similar amounts of support. In addition, rates of instrumental support and emotional support were not associated, indicating that couples were not typified by preferential use of one type of support over the other. However, rates of support solicitations and support offers were strongly positively linked, suggesting that couples tended to use similar rates of both methods to initiate support. Last, couples typified by more positive responses to support initiations tended to show fewer negative responses, suggesting that couples tended to be either more positive or more negative in their responses to solicitations and offers of support.

In terms of correlations amongst different support behaviors, findings suggest that couples in which husbands receive proportionately more support have more offers of support and more negative responses to support initiations; thus, couples in which wives received more support had more solicitations of support and more positive responses to support initiations. Couples in which support tends to be offered also have higher rates of instrumental support, whereas couples with high rates of solicited support have higher rates of emotional support. Last, couples with higher rates of instrumental support tend to have support interactions of shorter duration and more positive responses to support initiations (i.e., positive response to

solicitations, positive acceptance of offers). This contrasts with couples with higher rates of emotional support that tend to have longer support interactions with more negative responses.

Findings also demonstrate that proportions of support offers (but not support solicitations) were significantly correlated between husbands and wives, suggesting that when one partner offers support at a high rate, the other partner is likely to offer support at a high rate as well. Additionally, the strong positive correlation between husband-solicitations and husband-offers suggest that husbands in particular engage in support initiation using both methods to similar extents. Last, high rates of husband-solicitations co-occur with high rates of wife-offers, showing synchrony between both partners in benefiting husbands as receivers.

Capitalization Interactions: Rarely Observed

Capitalization initiations (disclosure or inquiry) were observed in 12 clips out of the 10,030 couple clips in the study, comprising only .01 of all potential marital interactions. Table 16 presents raw data for capitalization coding. The 12 clips come from 6 different families, ranging from 1 clip per family to 3 clips per family. None of the capitalization clips were instigated by a child. All 12 capitalization clips reflected instances where husbands were the receivers and wives were the providers of support. In all but 1 of these 12 clips, husbands disclosed about the positive event to their wives. The one clip in which the wife inquired about the positive event was a situation in Family 16 where the wife opened and read a letter addressed to the husband informing him of a promotion; the wife then excitedly told her husband.

A closer look at the content of these interactions shows that all interactions involved positive events at work for husbands. For example, topics included receiving positive feedback from a supervisor, receiving positive feedback from a student, getting a better office at work,

being given an exciting job opportunity, getting a raise, getting a promotion, and making progress in marketing a self-owned small business. Responses to capitalization events by wives were varied. Six of the 12 responses (50%) were active-constructive, including enthusiastic responses such as "Wow, congratulations!" as well as questions and answers about the positive event that reflected positive engagement. There were 2 instances of passive-constructive responses (17%), one in which the wife silently nods in response, and another instance in which the wife says "Cool" in a soft voice to which the husband emphasizes "*Very* cool!" There was 1 instance (8%) of an active-destructive response in which the wife asks the husband if someone else will take the commission for his success at work. Finally, the last 3 of the 12 clips (25%) reflect passive-destructive responses in which the wife appeared distracted and/or uninterested.

Accounting for continuation clips among the 12 coded clips resulted in 9 unique capitalization interactions that came from 6 different families, ranging from 1 interaction per family to 2 interactions per family. As before, all 9 capitalization interactions are comprised of husband-receiver and wife-provider roles, and none are instigated by a child. Eight out of the 9 interactions (89%) were disclosed by husbands, with 1 interaction initiated by the wife's inquiry (Family 16, described earlier). Of the 9 responses, 4 (44%) were active-constructive, 1 (11%) was passive-constructive, 1 (11%) was active-destructive), and 3 were passive-destructive (33%). Thus, capitalization was very rarely coded across the 4 days of observation indicating that the sharing of positive or fortunate events with one's spouse is an uncommon occurrence in the everyday lives of couples in our sample. However, the few instances of capitalization that occurred all entailed husbands sharing about positive work events with wives.

Discussion

This study examined observed everyday couple support interactions as they unfolded *in situ* inside the homes of 30 heterosexual, dual-earner couples over 2 weekdays and 2 weekend days. A new observational coding system was developed and implemented to code this novel ethnographic digital archive of couples' everyday interactions, including codes developed to assess for the support roles played by husbands and wives (provider or receiver), type of support exchanged (instrumental or emotional), how the support was initiated (solicited or offered), and the quality with which support was initiated and responded to (positive versus negative). The result is a rich descriptive analysis of support interactions as they naturally occurred, both at the level of the individual support behaviors as well as at the level of the couple. Analyses also examined notable patterns among different kinds of support behaviors, and in particular tested the Support Gap Hypothesis developed from self-report studies of couple support processes.

What I captured, what I didn't: Explicit support in the busy-ness of everyday life

Support turned out to be just a small component of everyday couple interactions. The small fraction of the time that couples spent together in which support was observed and coded (4%) suggests that while support is an everyday occurrence, it is not a primary part of daily interactions. Indeed, this small amount of time spent in overt supportive interaction needs to also be understood in the greater context of home life for these working parents with school-age children. Scholars have characterized the experience of returning home from work to domestic demands as the "six o'clock crash" (Larson & Richards, 1994), and describe household and childcare as "the second shift" following the first shift of paid work completed by employed parents (Bianchi, Milkie, Sayer, & Robinson, 2000; Hochschild, 2003; Moen & Roehling, 2005). A prior analysis of the CELF scan sampling data – in which a researcher systematically

documented the locations of all family members at 10 minute intervals – found that couples were observed together and with their children in about 35% of the scan sampling rounds, but were observed together *without* children present in less than 10% of the scan sampling rounds (Campos, et al., 2009). Thus, during the times that they were observed, spouses were very seldom alone with their partners, and another analysis of the CELF data has shown that both husbands and wives were most frequently observed to be engaged in housework activities out of all kinds of activities that were coded (Saxbe, Repetti, & Graesch, 2011). Prior work has found that the time pressure and urgency experienced by working parents with children leads to prioritizing "family time" in the service of the children over their own individual needs or the needs of the couple relationship (Daly, 2001). This colors the background in which opportunities for supportive interactions took place; unlike laboratory observation paradigms, the CELF couples on video weren't sharing private moments focused on "couple issues" or moments characterized by undivided attention. Rather, the supportive interactions we observed were in the midst of the hustle and bustle of daily family life.

The majority of supportive interactions we observed was characterized as instrumental (81% v. 18% emotional) in nature, indicating that support tended to be practical and oriented towards completing the mundane chores of everyday life. Furthermore, the vast majority (83%) of supportive interactions was extremely brief (i.e., < 30 seconds long), and the quality with which support was initiated (95%) and responded to (85%) was largely neutral or positive. Responses to support initiations were usually identified and coded (90%). Thus, the picture of these everyday support interactions is one of brief, task-oriented exchanges of instrumental support that were typically dispassionate (or at least not negative or conflictive) in tone and responded to without delay by partners. The view of couple support process provided by this

research differs drastically from the laboratory observation work that utilizes personal change topics (i.e., "talk about something you would like to change about yourself"; Sullivan et al., 2010) that are more likely to elicit emotional support processes. As such, it appears that the couple support interactions studied in the laboratory may focus in on support processes that are relatively rare (although not necessarily less important) in the context of normal routines. Daily report studies have better attended to both instrumental and emotional types of support, and have suggested that instrumental support is consistently linked with mood benefits for the recipient, regardless of whether it is visible or invisible, whereas emotional support ceased to be beneficial and bore costs for mood when it was recognized by the recipient (Shrout et al., 2006). While the current investigation did not examine perceptions of support, it is interesting to note that this would suggest that the instrumental support interactions observed in everyday life would appear to be more consistently beneficial for both partners, whereas the emotional support interactions studied in the laboratory are more nuanced in terms of their benefits and costs.

It should be noted that the coding scheme I developed was specifically geared towards identifying *explicit support interactions*, identifying the potential for supportive interactions to occur based on the observation of overt solicitations, offers, or acknowledgments of support. The focus on explicit support was in part a requisite for working with these streams of video-recordings on unstructured naturalistic interactions, in order to operationalize, identify, and reliably code supportive behavior. As such, certain kinds of supportive activities were not assessed in this research. For example, the concept of "invisible support" (e.g., Bolger et al., 2000) – the notion that support is provided but is not recognized by the receiver – may be borrowed from the daily report literature and applied to this coding scenario. While my coding scheme was developed to capture supportive behavior with or without acknowledgement of the

support by the receiver, it was possible another kind of invisible support occurred – support that was provided but was not recognized by the *observer*. A prior analysis of CELF couples' communicative patterns around parenting and household tasks suggested that clear and equitable models of household management were characterized by efficient communication that "minimize the need for partners to evaluate and manage one another's task-related behaviors, and…allow partners to fulfill their household duties with the knowledge that the partner will not in fact overstep established boundaries" (p. 44; Klein, Izquierdo, & Bradbury, 2007). This primarily unspoken and routinized cooperation between spouses in the activities of daily home life may result in support that is undetected by spouses and observers alike. From another perspective, the skillfulness with which support is provided may be another factor contributing to how detectable or undetectable the support is to a third-party observer (Rafaeli & Gleason, 2009). For example, *when* (i.e., the timing) support is provided may result in effective, efficient, and smooth support transactions that are not noticeable to the partner or an outside party. If Ron knows that Sally will have an important and busy week at work, and preemptively decides to do all the food-shopping and meal-planning for the week (before Sally asks him to and without Ron telling Sally the reason for his behavior), this may not register as support to Sally or an observer.

Support was primarily observed as being solicited (68%) and offered (31%), consistent with prior characterizations of how support is enacted (Pierce et al., 1996). I included a third category – acknowledgments of support – as another way in which to identify support occurrences, theorizing that sometimes, the only indication to observers of support having taken place would be a verbal recognition of the act after the fact. Interestingly, acknowledged support was observed in just a handful of instances (6 clips). This should not be mistaken as evidence that couples did not voice gratitude or recognition of support; in fact, acknowledgment of

support (i.e., “Thanks for doing that”, “Great”) frequently emerged in the context of a support interaction that was first initiated (and coded) as a solicitation or offer. However, what this does suggest is that there is little recognition of support that occurred in the more distant past, or perhaps support that is not narrowed to specific and discrete actions. This may, again, speak to the silent cooperation exhibited in couples and families where support and supportive routines are enacted in a way that do not call for acknowledgment or evaluation by the partner.

Capitalization

Although this investigation initially began with a rather balanced interest in support provided both in the context of need and in the context of fortune, a surprise was the absence of capitalization interactions. In total, only 9 capitalization interactions were observed, suggesting that capitalization support is a relatively low base-rate occurrence. Strikingly, all 9 of those interactions consisted of husbands being in the receiver role and wives being in the provider role, and the substantive topic for all interactions was work-related. This is especially interesting given that the wives in our sample of dual-earner couples were also employed full-time and presumably had just as much opportunity for positive experiences in the workplace. It may be that husbands more actively disclosed about positive events to their wives due to expectations that their wives will respond in an encouraging way; interestingly, we observed that wives’ responses were not always positive and showed marked variation. Wives, on the other hand, may elect not to share their positive events with their husbands because they do not derive as much benefit from such disclosure. Perhaps wives are concerned about how their positive work experiences (that may entail advancement) may negatively affect their spouses. On the other hand, perhaps wives choose to capitalize on their successes with other individuals in their typically larger and more diversified support networks (Phillipson, 1997). At any rate, the

results of this study suggest that capitalization interactions were rather rare occurrences in the everyday lives of the CELF couples, and that when capitalization took place, it was *always* in the context of a husband sharing about a positive work experience with his wife.

A New Support Gap Hypothesis

The claims of the Support Gap Hypothesis were directly challenged by the results of this study. Whereas researchers have argued for the presence of a support gap (e.g., Belle, 1982, Cutrona, 1996) based on self-report evidence indicating that men perceive receiving more support (and more helpful support) from their wives than wives report from their husbands, laboratory observation studies have shown no such sex differences in the amount of support provided and received (e.g., Verhofstadt et al., 2007; Pasch et al., 1997; Neff & Karney, 2005), and the evidence on sex differences in terms of how helpful or positive the provided support is remains inconclusive (Verhofstadt et al., 2007; Lawrence et al., 2008; Pasch & Bradbury, 1998). The CELF data indicate that wives receive significantly *more* support from husbands than husbands do from wives; wives were the recipients in 2/3 of the support interactions that were observed, and the average wife received 60% of the support that was exchanged. This appears to be due to wives more actively soliciting support from husbands rather than husbands offering more support to wives. In fact, in the average couple, 42% of all the support interactions were initiated via wife solicitation. Thus, wives received more support from husbands and this was driven by the wives' own support-seeking behavior. This finding highlights the importance of moving beyond simply studying rates of received and provided support, to more closely examining how support was initiated. Although wives were the support receivers, this did not relegate them to a passive role; indeed, their active support solicitations played a key role.

The pattern of wives receiving significantly more support primarily through their active solicitations of support is consistent with another pattern revealed at the level of the support behaviors themselves showing interactions in which husbands were the recipients of support were more likely than expected by chance to be initiated by their spouse's offer of support, and interactions in which wives were the recipients were less likely than expected to be initiated by their spouse's offer of support. Thus, regardless of whom was the receiver of support, wives appeared to be the main "initiators" of support processes, either through solicitations or offers. Perhaps wives are more attuned to both their own needs and their spouse's needs, and more easily express and act on those needs, consistent with gender role theories that stress the more relationship-oriented and interdependent nature of women's social roles (e.g., Gilligan, 1982). Certainly, prior support work has found wives to be generally more attuned to their husbands' needs, providing more support when husbands experienced greater daily stress (Bolger et al., 1989; Neff & Karney, 2005). In couples in which one member had diabetes, wives but not husbands were found to provide more support on days in which their spouses experienced diabetes-specific anxiety (Iida, Stephens, Rook, Franks, & Salem, 2010). Alternatively, another perspective may hone in on the domestic roles of husbands and wives as contributing to these solicitation and offer processes. A prior analysis of the CELF couples showed wives to spend a significantly higher percentage of their time in housework (31%) and childcare (10%) compared to husbands (20% and 6%; Saxbe et al., 2011). Given that the majority of the support observed in this study was instrumental in nature (e.g., giving the kids a bath, cleaning up after dinner, finding instructions), it may be that wives solicited more instrumental support simply due to being taxed with an objectively greater share of the load. Similarly, husbands may be more

likely to receive support through offers from their wives due to wives being "in charge" in the domestic sphere and knowing well how to get things done.

In addition, of the number of support interactions that occurred for each couple, wives appeared to solicit significantly more instrumental support from their husbands than husbands did from wives, contributing to wives receiving proportionately more instrumental support from husbands than husbands did from wives. Two marginally significant sex differences also suggested that when seeking support, husbands were more likely than wives were to seek emotional support, and when offering support, wives were more likely than husbands to offer emotional support. These findings suggest an interesting process whereby spouses appeared to adapt their support behavior based on their expectations of their partner consistent with gender roles. For example, wives may solicit more instrumental support relative to husbands because they expect their husbands to be better providers of instrumental support in particular. Also, the finding that when husbands seek support, they were more likely to solicit emotional support than wives were, also lends support to this hypothesis, suggesting that husbands solicited the kind of support that they expected their wives to be best able to provide.

These data were not well-suited for examining how effective the support was. However, codes for the quality of the support interactions suggest that overwhelmingly, support was initiated and received in a neutral or positive manner. Thus, findings from this analysis do not support the Support Gap Hypothesis claim that wives provide better or more positive support. Prior studies have found that wives may not generally provide support that is "better", but that wives are in fact more responsive to both the severity of the problem (i.e., providing more positive support for more severe problems; Neff & Karney, 2005) and their husbands' fluctuating need for support (i.e., when husbands experienced greater stress; Neff & Karney, 2005; Bolger et

al., 1989). In this analysis, high rates of husband-solicitations were linked with high rates of wife-offers, suggesting that perhaps wives adjusted their support offers to match the rate of support solicited by their husbands. However, the opposite was not true for wives in the receiver role; high rates of wife-solicitations were not linked with high rates of husband-offers. Thus, it appears that these data provide tentative evidence supporting the notion that wives are more sensitive and responsive to husbands' solicitations of support as an indicator of husbands' needs. Because this analysis cannot speak to the direction of effects, however, this interpretation is speculative and further research in this area is needed.

Limitations

There are some limitations of this study that warrant discussion. First, the sample was small (30 couples) and consisted of a narrow demographic that included dual-earner middle-class heterosexual couples with school-age children. Thus, there was limited power to detect significant effects, and conclusions about support processes drawn from this analysis are not reflective of the general population. Future work needs to be done examining support in other family structures and demographic groups. Secondly, this analysis was at the between-subject and between-couple level and cannot speak to changes in support behavior that took place over several days. Third, the strength of these data being naturalistic and unstructured also contributes to more ambiguity in the interpretation of its findings compared to its cleaner and more controlled cousin, laboratory observation. For instance, the context (e.g., level of need, who's "problem" it is) in which support took place – so clearly identifiable and/or structured by researchers in the laboratory – is a changing and variable one in the naturalistic setting of the home that is markedly difficult to assess. Last, perhaps the greatest limitation is the kind of support that was detected by this coding scheme and the kinds of support that were not. As

discussed earlier, this study was designed to identify and assess explicit support behavior, thereby missing support that may have been so skillfully provided or were routinized so as to be "invisible." Thus, the data presented here should not be considered an exhaustive examination of all support processes in everyday life.

STUDY 2

PREDICTORS AND OUTCOMES OF MARITAL SUPPORT PROCESSES: MARITAL SATISFACTION, HPA-AXIS ACTIVITY, EMOTIONAL DISTRESS, AND JOB STRESS

Social support is an aspect of everyday interpersonal experience shown to have striking consequences for physiological functioning and mental health and well-being (Seeman, 1996; Cohen, 2004). Support received in the context of a close relationship, in particular, has received special attention given the key role of the romantic relationship in the health and well-being of the members of a couple (Kiecolt-Glaser & Newton, 2001; Robles & Kiecolt-Glaser, 2003). Indeed, research has suggested that support from other social sources cannot compensate for a poor marital relationship (Coyne & DeLongis, 1986), and in fact, the higher mobilization of support from individuals other than the spouse is associated with marital distress (Julien & Markman, 1991). Studies have found that when workers face job stress, spouses can be an important source of both emotional support (Repetti, 1989) and instrumental support (Bolger, DeLongis, Kessler, & Wethington, 1989), and support from one's spouse has also been more broadly linked with emotional well-being (e.g., Davila, Bradbury, Cohan, & Tochluk, 1997) and biological stress responsivity (e.g., Sjögren, Leanderson, & Kristenson, 2006). Simply put, support from a spouse is unique and plays a significant role in how couples cope with the demands of everyday life, with relevance for how members of a couple view their relationship, as well as the health and well-being of its members. Below, I review research that addresses the interrelationships between couple support processes and indicators of marital satisfaction, the hypothalamic-pituitary-adrenal (HPA) axis, emotional distress, and job stressors, in making the

case for the need to examine the predictors and outcomes of marital support processes as they naturally unfold in couples' everyday interactions.

Couple Support and Marital Satisfaction

Several studies have consistently identified a connection between couple support and marital adjustment. Self-reports of greater amounts of marital support are linked with higher concurrent marital satisfaction (e.g., Acitelli & Antonucci, 1994; Julien & Markman, 1991), as well as increased daily feelings of relationship intimacy and closeness (e.g., Belcher et al., 2011; Gleason, et al., 2008). Observations in the lab have also revealed that spouses who made more supportive statements to their partners reported higher levels of marital satisfaction (Cutrona & Suhr, 1994). However, it's not just the *amount* of support received that is relevant for enhancing marital satisfaction, but rather how appropriate that support is to meeting the spouse's needs and facilitating effective coping, a concept called optimal matching theory (Cutrona, 1990). For example, when provided support mis-aligns with the type of support solicited (i.e., emotional or instrumental), marital satisfaction is lower (Cutrona et al., 2007). In addition, both the underprovision and overprovision of support have been shown to predict marital declines (Brock & Lawrence, 2009), and in another study, perceptions of support adequacy more strongly predicted marital satisfaction for husbands than perceptions of support amount (Lawrence et al., 2008). The perceived adequacy of support has also been found to improve marital satisfaction in the face of stress spillover for wives (Brock & Lawrence, 2008); thus, marital support appears to play a buffering role in the link between stress and marital satisfaction.

The valence of support processes is also relevant for marital satisfaction. Relatively satisfied spouses generally display more positive and less negative supportive behavior during couple interactions (Pasch & Bradbury, 1998). Couples' supportive behaviors have also been

shown to predict marital adjustment; wives who were more negative and less positive in their provisions of support were more likely to be in distressed marriages two years later (Pasch & Bradbury, 1998), and couples who engaged in more negative relative to positive support behavior displayed greater negative emotion during interactions observed 1 year later (Sullivan et al., 2010). Last, negative support behavior predicts divorce even in couples who reported high marital satisfaction as newlyweds (Lavner & Bradbury, 2012).

It should be noted that the links between couple support and relationship adjustment come exclusively from either self-report studies, hampered by recall and response biases, or laboratory observations of support interactions that may not accurately capture the authentic circumstances and process by which support naturally occurs in everyday life. In both cases, the connection between couple support processes and marital satisfaction may be inflated. In self-report studies, response biases (due to mood, personality, or some other individual characteristic) may lead participants to respond similarly on their subjective impressions of both constructs. Social desirability bias, in particular, may influence how individuals evaluate their marriages to researchers, as well as put couples on their "best behavior" in time-limited and structured interactions where the processes under study are relatively transparent. On the other hand, research on enacted couple support interactions in everyday environments does not contend with the recall and response biases of self-report studies. Additionally, the capacity of participants to screen and control their overall behavior in their natural environments over extended periods of time – where the targeted behaviors or processes are unclear – is greatly diminished. Thus, naturalistic observation would lend critical insights into whether the associations identified between marital satisfaction and couple support processes persist in naturalistic settings.

Couple Support and HPA-Axis Function

The hypothalamic-pituitary-adrenal (HPA) axis secretes cortisol in humans, a hormone viewed as a biomarker of subjective and objective stress, as well as a potential mediator between stressful experience and physical health (Saxbe, 2008). Cortisol is released in a diurnal rhythm, peaking within the first hour of awakening, declining steeply over the morning hours, and then gradually tapering off in the afternoon and evening before reaching its nighttime low. According to the allostatic load model, which refers to the notion that repeated stressful experiences can lead to an accumulation of physiological "hits" that causes wear and tear on the body's self-regulatory systems (McEwen, 1998), steeper diurnal slopes are viewed as representing healthier HPA-axis functioning, and blunted diurnal slopes are seen as reflecting compromised HPA-axis functioning. Thus, the diurnal cortisol slope is one indicator of HPA-axis functioning relevant for understanding the linkage between stress physiology and social experience. While the majority of cortisol studies focus on reactivity of the HPA-axis to acute stressors and conflict tasks in the laboratory, a growing body of naturalistic studies examines basal rhythms as cortisol is secreted across the day. Steeper diurnal slopes are generally associated with better health and well-being, whereas flatter slopes are linked with poor mental and physical health (e.g., Sephton, Sapolsky, Kraemer, & Spiegel, 2000; Miller, Chen, & Zhou, 2007; Bhattacharyya, Molloy, & Steptoe, 2008; Lauc, Zvonar, Vuksic-Mihaljevic, & Flögel, 2004; Sjögren, et al., 2006).

Few studies have considered how diurnal cortisol rhythms are connected to relationship factors, such as support; the studies that do have found that satisfactory marital quality and social support are linked with steeper cortisol slopes, and that high marital quality and marital support may protect individuals from the negative physiological effects of stress. In general, steeper diurnal cortisol slopes have been linked with more perceived overall social support, while flatter

slopes have been linked with less perceived overall social support (Sjögren, et al., 2006; Abercrombie, Giese-Davis, Sephton, Epel, Turner-Cobb, & Spiegel, 2004). Furthermore, studies have found poorer marital relationship quality – specifically, less rewarding marital relationships for women (Adam & Gunnar, 2001) and more marital role concerns for both men and women (Barnett, Steptoe, & Gareis, 2005) – to be related to blunted cortisol slopes. Higher marital satisfaction, on the other hand, has been shown to be positively associated with steeper cortisol slopes for women (Vedhara, Tuin stra, Miles, Sanderman, & Ranchor, 2006; Saxbe, Repetti, & Nishina, 2008), and has been found to mitigate the negative effects of daily job stress on cortisol slopes for wives in dual-earner couples (Saxbe et al., 2008). In addition, wives lower in marital disclosure have been found to be more reactive in their diurnal cortisol levels to their own worries about work compared to wives who are more prone to disclose to their husbands (Slatcher, Robles, Repetti, & Fellows, 2010); perhaps reticence to disclose to one's partner is due to a lack of trust in the availability of emotional support from the spouse.

In sum, research suggests more supportive marriages are linked with steeper cortisol slopes, and that better relationship quality can moderate the impact that stress has on physiology. However, assessments of how supportive a marriage is or its relationship quality have been limited to self-report methods, calling into question the degree to which these subjective impressions are colored by response biases and how accurately they reflect enacted support behavior. Observations of supportive behavior in naturalistic settings coupled with measures of diurnal cortisol slopes would provide much needed insights into whether and how spouses' supportive behavior influences their HPA-axis activity.

Couple Support and Emotional Distress

The associations between relationship functioning and emotional distress in couples are well-documented, with a large literature in particular focusing on the interpersonal context of mood disorders in marriages (e.g., Rehman, Gollan, & Mortimer, 2008). Marital dissatisfaction has been consistently linked with increased risk for depressive disorders in national samples (Whisman, 1999; Kamp Dush, Taylor, & Kroeger, 2008), and marital distress and spousal depression have been shown to share bidirectional longitudinal associations (Whisman & Uebelacker, 2009; Davila, Karney, Hall, & Bradbury, 2003). Interactional models of marriages and depression have received empirical support for illuminating how interpersonal processes and emotional distress are related. Coyne's (1976) interactional theory of depression states that depressed individuals are more likely to seek reassurance and support from their partners than non-depressed individuals, but that depressed individuals are simultaneously less able to respond to the needs of others. More specifically, Hammen's (1991) stress generation model posits that individuals with depressive symptoms are – in part – responsible for creating stressful interactions with their spouses that in turn generate more depressive symptoms, contributing to ongoing depression and marital discord. These two interactional models provide conceptual frameworks with which to understand the interpersonal context of distress in marriage.

While the effects of depression in one or both members of a couple on observed couple conflict or problem-solving interactions are well-documented (i.e., associated with more negative and less positive behaviors; for a review, see Rehman, Gollan, Mortimer, 2008), there is a lack of data on how depression is linked with *observed couple support behavior*. One exception is a study by Davila and colleagues (1997) in which wives with higher levels of depressive symptoms were observed soliciting, providing, and responding to received support in a more

negative way with their husbands. Those behaviors, in turn, led to increased marital stress, lending support to Hammen's (1991) stress generation model. These findings dovetail nicely with an early observational study of female students' interactions with friends and strangers; the results indicated that dysphoric individuals provided and solicited support with more negative mood (Rook, Pietromonaco, & Lewis, 1994). Thus, observational data suggest that individuals with depressive symptoms interact in more negative ways with others that may have detrimental effects on relationships as well as individual well-being. However, the prevailing wisdom focuses on the opposite causal direction: higher levels of support (regardless of source) are thought to have beneficial effects for health and well-being (e.g., Seeman, 1996; Cohen, et al., 2004). Support has also been conceptualized as buffering the impact of stressors on well-being; for example, high marital support has been found to be protective for the links between economic pressure and emotional distress 1 year later in couples (Conger, Rueter, & Elder, 1999).

Another commonly studied indicator of emotional distress is trait neuroticism, a global personality dimension that assesses emotional instability (John & Srivastava, 1999). Neuroticism refers to a tendency to experience negative affect, such as worry or sadness, with decreased ability to cope effectively with stress or to regulate emotional states (Watson, 2000). Studies have found that individuals high on neuroticism generally experience greater exposure and reactivity to stressful events (e.g., Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Gunthert, Cohen, & Armeli, 1999), and a recent meta-analysis concluded that individuals high on neuroticism tend to engage in problematic coping strategies such as wishful thinking and withdrawal (Connor-Smith & Flachsbart, 2007). Furthermore, neuroticism is associated with lower levels of life satisfaction (De Neve & Cooper, 1998) and marital satisfaction for newlyweds (Karney & Bradbury, 1997).

Neuroticism is closely tied to social behavior; for example, individuals high on neuroticism tend to seek more emotional support (Connor-Smith & Flachsbart, 2007). However, the quality of high neuroticism individuals' social behavior appears to be more negative in nature. In a longitudinal study, Caughlin and colleagues (2000) identified linkages between trait anxiety with one's own, as well as the spouse's, self-reports of negative communication behaviors; negative communication behaviors mediated the association between trait anxiety and marital distress. While observational data have not uncovered an association between neuroticism and conflict interactions (Karney & Bradbury, 1997), research on *support interactions* in the lab has found spouses high on negative affectivity more likely to provide and solicit support in a more negative fashion, with husbands in particular more likely to reciprocate negative behavior and to have their negative behavior reciprocated by wives (Pasch, et al., 1997).

The literature has been hindered by its reliance on self-report methods (limited by recall and response biases) to study the connections between emotional distress and support provision and receipt in couples. However, the limited data from laboratory observation studies hint at sex differences in the types of emotional distress that may be more predictive of support processes – in particular, the emotional tone of the support – for men versus women. For example, with regard to depression, wives' depressive symptoms appear to more strongly affect the supportive behavior of both members of a couple (e.g., Davila et al., 1997). Alternatively, husbands' neuroticism appears to bear greater influence on support behavior (e.g., Pasch et al., 1997). Given the paucity of observational work in this area, however, further research is needed to clarify whether, how, and what specific aspects of emotional distress affect observed support behavior for couples. Observation of couple support interactions in naturalistic settings would shed light onto these processes as they occur in the more ecologically valid context of the home.

Couple Support and Job Stressors

For couples balancing the demands of work, home, and raising a family, communication with one's spouse in the navigation of the tasks of everyday life becomes critical (Klein et al., 2007), suggesting that instrumental and emotional support from a spouse can greatly influence domestic life. The literature on social support and chronic stress typically conceptualizes support as a coping resource that buffers the effects of stress (i.e., the emotional, cognitive, and physiological response to stressors) on health and well-being (e.g., Cohen et al., 2004; Taylor & Stanton, 2007). For example, the effect of economic pressure on later emotional distress in couples is weaker for couples displaying greater marital support behavior during lab interactions (Conger, et al., 1999), and perceived adequate support buffers the effect of stress spillover on marital satisfaction (Brock & Lawrence, 2008). Daily report studies in this area have also shown that spousal support can protect against the effect of work overloads on the carryover of negative moods from the workplace into the home by facilitating a period of restorative social withdrawal (Repetti, 1989). Less research examines the main effect associations between social support provision and receipt with daily stressors, that is, everyday demands, hassles, and strains[8]. As such, little is known about how everyday stressors shape supportive behavior in couples.

The limited work in this area has found an interesting gender difference showing wives to be more adept providers of support when their husbands experience higher levels of daily stress. For example, wives were more likely than husbands to do more housework on days in which their partners experienced work overloads (Bolger et al., 1989). Other daily report research has found that husbands who reported the greatest levels of daily life stressors (e.g., work-related,

[8] I note here my emphasis on processes involved in the provision and receipt of social support compared to structural social support or social integration for which a large literature has found direct beneficial links with the experience of stress, health and well-being.

health-related, interpersonal) also reported receiving more support from their wives; wives who described high stress days, however, actually perceived more negative behavior from their husbands (Neff & Karney, 2005). Furthermore, in laboratory observations, wives have been found to provide more positive support to their husbands during lab interactions in which husbands shared about a personal problem self-rated higher on severity; husbands, however, did not adjust their supportive behavior to the severity of their wife's personal problem (Neff & Karney, 2005). Thus, the links between stress – both daily stressors as well as acute personal problems – with supportive behavior appears to be moderated by the sex of the support provider, with women being more perceptive and responsive to the needs of their spouses.

What the literature has yet to show is how *observed* social support behavior in everyday contexts is linked with daily stressors. Although the Neff and Karney (2005) study observed support behavior in the context of a laboratory discussion about a personal problem, because the "stressor" in question is an issue that may be chosen for discussion based on the speaker's expectation of what kinds of problems their partner may be more or less helpful for, and because the problem itself may range broadly in terms of content, these findings cannot be used to approximate the links between daily stressors and everyday observed support interactions. Furthermore, when the researcher-prompted task at hand is for a couple to discuss one spouse's personal problem in a targeted fashion for several minutes, it is unclear whether the observed processes map onto what happens in naturalistic contexts where individuals and their partners may respond in a myriad of ways given the unstructured and "noisier" context of everyday life. In particular, daily report studies have capitalized on the daily stressors that occur in the workplace and at school as being the primary sources of outside stress that permeate and affect the family (Repetti, Wang, & Saxbe, 2009). Thus, an examination of how daily job stressors

impact observed couple support behavior in the naturalistic context of the home would clarify whether support provision and support receipt increase, or decrease, in response to stress.

His and hers: Potential sex differences

The literature provides some clues regarding possible sex differences that may emerge when examining how marital support processes that unfold in everyday life relate to husbands' and wives' individual health and well-being and other aspects of their lives at home and at work. Different kinds of emotional distress may influence support processes differently depending on the sex of the individual; the limited laboratory observation work in this area indicates that wives' depressive symptoms more strongly predict couple support behavior (e.g., Davila et al., 1997), and there appear to be more links between husbands' compared to wives' neuroticism and marital support interactions (e.g., Pasch et al., 1997). With regard to stressors, studies suggest that wives in particular are more responsive to their husbands' level of stress, providing more support and more positive support when their husbands experience higher levels of stress (e.g., Neff & Karney, 2005). In other domains where couple support is more typically viewed as the predictor, there is less evidence for sex differences. Studies have failed to detect sex differences in the concurrent association between couple support behavior and marital satisfaction, and the lack of data on observed couple support behavior and diurnal cortisol slopes provides no basis from which to speculate about sex differences.

Moving Beyond Receipt and Provisions of Support

One major limitation of prior support research is the focus on support as being either received or provided in dyads. These studies have lacked the ability to distinguish among different kinds of support with regard to how those interactions arise. Much of the limitation in the literature is due to methodological constraints. For example, laboratory studies typically

comprise 2 interaction tasks that instruct both partners to take turns playing the role of the support provider and recipient. The roles for each interaction are clearly delineated, with the provider being instructed to begin the interaction by disclosing about a personal issue. Thus, all provisions of support by the partner are necessarily provisions of support in response to these direct and researcher-prompted solicitations for support.

The self-report and daily report traditions similarly cast the members of a couple into the roles of support provider and recipient by identifying one spouse as the recipient (usually based on an upcoming major stressor or a serious health condition) and the other spouse, by default, as the support provider. Subsequent support transactions are documented as being provided and received, without further delineation as to how the support was initiated. One early study by Eckenrode and Wethington (1990) found that receiving support from network members without explicitly requesting support bore benefits for the preservation of self-esteem as well as feelings of intimacy in the relationship, and the growing literature on the benefits of "invisible support" (i.e., support that is provided but not recognized as received) also hint at the importance of studying differences in how support interactions naturally arise (e.g., Bolger et al., 2000).

In particular, it appears that an important distinction is whether support is provided through voluntary spontaneous offers by the provider in the absence of solicitation by the recipient, or through support provided in response to the recipient's solicitation for support. Imagine the difference between two couples displaying similarly high levels of support overall; in one couple, the support is provided primarily in response to requests for help, whereas in the other couple, the need for support is typically anticipated with resulting offers of support made before the partner indicates a need. The questions addressed in Study 2 hone in on these distinctions as being worthy of closer study, and capitalize on the observational support codes

from Study 1 that enable a closer look at the naturally occurring *support solicitations* and *support offers* that lead to *support receipt* which are not possible with laboratory observation and self-report data. Thus, all analyses examine the links between rates of received support, solicited support, and offered support with various indicators of marital satisfaction, HPA-axis function, emotional distress, and job stressors.

Research Questions

The research questions in the current study are addressed using cross-sectional analyses examining the associations between the five individual variables discussed above (marital satisfaction, diurnal cortisol slopes, depressive symptoms, neuroticism, job stressors) and naturalistic couple support processes. The support behaviors that are the focus of this investigation include the amount of support *received* (and provided) overall, the amount of support *solicited* to (and by) the spouse, and the amount of support *offered* to (and by) the spouse. Marital support is sometimes modeled as the outcome variable and sometimes as the predictor variable, depending on the hypothesized relationships between support behavior and the five individual variables. Specifically, support is tested as a predictor of marital satisfaction and diurnal cortisol slope, whereas support is modeled as an outcome of emotional distress and job stressors.

Marital satisfaction. A large literature from the self-report and laboratory observation traditions finds strong links between marital satisfaction and received and provided support (e.g., Julien & Markman, 1991; Cutrona & Suhr, 1994). However, these studies failed to examine how marital satisfaction is linked with the method by which support is initiated. Thus, RQ1 addresses whether received support predicts marital satisfaction, whereas RQ2-3 look more closely at how support is initiated (support offers and support solicitations) in predicting marital satisfaction.

Greater amounts of received support are hypothesized to predict higher marital satisfaction. Spontaneous offers of support to one's partner are conceptualized as contributing to high marital satisfaction, signaling the motivation to anticipate and meet a spouse's need by the provider, and providing the benefits of unsolicited support to the receiver who may then be more prone to view the marriage positively. Support solicitations, on the other hand, are viewed as predicting low marital satisfaction. Prior work has found that receiving support without soliciting it is linked with more feelings of relationship intimacy (Eckenrode & Wethington, 1990), suggesting that soliciting support in turn is linked with poorer perceptions of the relationship. The spouse soliciting support might feel a lack of support, whereas the spouse responding to the solicitations might feel pressured or annoyed by the partner's help-seeking behavior, leading to lower marital satisfaction scores for both spouses. Given the literature, no sex differences were hypothesized in whether couples' support behavior predicted marital satisfaction for husbands and wives.

RQ1: Does more support received from one's partner predict greater marital satisfaction for both spouses?

RQ2: Do more support offers to one's partner predict greater marital satisfaction for both spouses?

RQ3: Does more support solicitation from one's partner predict lower marital satisfaction for both spouses?

HPA-axis activity. The allostatic load model (McEwen, 1998) of chronic stress and its cumulative strain on regulatory stress systems suggests that steeper cortisol slopes reflect healthier stress responding, and blunted or attenuated slopes reflect compromised stress response function. Past self-report research has shown high perceived social support from general sources (Sjögren et al., 2006; Abercrombie et al., 2004) and self-reported marital satisfaction (Saxbe et al., 2008) to be linked with steeper cortisol slopes. Based on this research, I hypothesize that receiving more support from one's spouse predicts steeper cortisol slopes for the receiver, and

more support offers to one's spouse predicts steeper cortisol slopes for the receiver. However, because support solicitations may act as demands or stressors for the provider of support, I predict that more support solicitations predict weaker slopes for the provider. I note that there have been no observational studies that have examined the links between couple support interactions and diurnal cortisol; given the relative lack of research in this area, no sex differences were predicted.

RQ4: Does more support received from one's spouse predict steeper cortisol slopes?

RQ5: Do more support offers predict steeper cortisol slopes for one's partner?

RQ6: Do more support solicitations to one's spouse predict weaker cortisol slopes for the provider?

Depressive symptoms. While prior observational work has found individuals with depressive symptoms to be more negative and less effective in their provisions and solicitations of support with others (e.g., Davila et al., 1997), these prompted interactions in the laboratory do not speak to whether individuals with depressive symptoms receive and provide more or less support, engage in more or less support-seeking behavior, as well as whether their partners are more or less likely to offer support. It may be that of the individuals who are higher on depressive symptoms, emotional and instrumental needs result in more of their own solicitations of support as well as more offers of support from their spouses. Alternatively, the interactional processes that contribute to poorer relationship functioning (i.e., stress generation; Hammen, 1991) in more depressed individuals may result in less support due to decreases in both solicitations and offers. These questions examine whether greater depressive symptoms predict observed rates of received support, offered support, and solicited support. Given prior work (Davila et al., 1997), I hypothesize that those predictive associations may be stronger for wives' depressive symptoms compared to husbands' depressive symptoms.

RQ7: Do greater depressive symptoms predict more support received from one's spouse and less support provided to one's spouse?

RQ8: Do greater depressive symptoms predict fewer offers of support to one's spouse but more offers of support from one's spouse?

RQ9: Do greater depressive symptoms predict more solicitations of support from one's spouse?

Trait neuroticism. Self-report studies have found that individuals high on neuroticism generally experience greater exposure and reactivity to stressful events (e.g., Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Gunthert, et al., 1999) that lead to the greater use of support as a coping strategy (Connor-Smith & Flachsbart, 2007). I hypothesize that, in the context of the tasks and obligations of everyday life, individuals higher on trait neuroticism receive more support from their spouses. I also predict that high neuroticism individuals both solicit more support from their spouses as a coping strategy, as well as receive more offers of support from their spouses who may be more likely to voluntarily assist their more easily stressed partners. Given prior work (Pasch et al., 1997), I predict that those associations may be stronger for husbands' neuroticism compared to wives' neuroticism.

RQ10: Does higher trait neuroticism predict more support received from one's spouse?

RQ11: Does higher trait neuroticism predict more offers of support from one's spouse?

RQ12: Does higher trait neuroticism predict more solicitations of support from one's spouse?

Job stress. Prior daily report research has suggested that wives increase their supportive behavior towards their husbands on days their husbands report greater job stress, specifically increasing support that facilitates recuperative social withdrawal (Repetti, 1989) as well as completing more of the housework (Bolger et al., 1989). Wives have also been shown to provide more support on days when their husbands' experienced greater stress (Neff & Karney, 2005).

Based on these findings, I hypothesize that greater job stress predicts more support received from one's spouse, more support offers from one's spouse, and more support solicitations to one's spouse. Given sex differences noted in prior work (e.g.. Neff & Karney, 2005), I predict that these associations are stronger for husbands' job stress compared to wives' job stress; in other words, I predict that wives are more responsive in their supportive behavior of their husbands.

RQ13: Does greater job stress predict more support received from one's spouse?

RQ14: Does greater job stress predict more offers of support from one's spouse?

RQ15: Does greater job stress predict more solicitations of support to one's spouse?

Method

Participants

Please refer to Study 1 Participants section.

Measures

Study 2 focuses on five different constructs: observed marital support behavior, marital satisfaction, HPA-axis activity, emotional well-being (depressive symptoms and trait neuroticism), and job stressors. The observed marital support behavior refers to the coded behaviors from Study 1. Marital satisfaction, emotional well-being, and job stressors are all measured via self-reports utilizing well-validated scales. HPA-axis activity is assessed through sampling of diurnal cortisol to arrive at a diurnal cortisol slope profile indicative of allostatic load and HPA-axis functioning.

Observed marital support behavior. The observed marital support behavior coded in Study 1 is used in Study 2. Specifically, Husband (Wife) Support Interaction Proportion Variables were used to examine proportions of Received Support, Solicited Support, and Offered Support specific to the husbands and wives for each couple (see Study 1 Table 4). The

denominator is the total number of couple clips per couple to represent rates of these support behaviors for each spouse (husband and wife) out of all 30-second clips in which couples were observed together.

Marital Satisfaction

Husbands and wives completed the 16-item Marital Adjustment Test (MAT; Locke & Wallace, 1959), a measure of global marital satisfaction, in a separate visit after the week of filming. The MAT is an instrument widely used by researchers to discriminate between satisfied and dissatisfied couples, and has been found to have a split-half reliability of .90. Spouses were asked about agreements and disagreements with their partners in a variety of areas, such as handling finances, sexual relations, dealing with in-laws, and how disagreements are handled. Higher scores on the MAT are associated with better marital functioning, with average scores around 115, scores below 100 indicating some distress in the marriage, and scores below 70 indicating severe distress. In this study, both the mean and median scores were 111 (SD = 22.55; range 54 - 163), with no significant sex differences between the husbands' scores (M = 115; SD = 20.31) and wives' scores (M = 108; SD = 24.43); $t(29) = -1.66$, *NS).* Nineteen of the 60 participants scored below 100, indicating that a third of the sample reported marital distress.

HPA-Axis Functioning

The diurnal cortisol slope is used as an indicator of HPA-axis functioning relevant for understanding the linkages between biological stress response systems and social experience (Repetti, Wang, & Saxbe, 2011). As reviewed earlier, the allostatic load model posits that repeated stressful experiences can cause wear and tear on the body's self-regulatory systems (McEwen, 1998); accordingly, steeper diurnal slopes reflect healthier HPA-axis functioning, and blunted diurnal slopes reflect compromised HPA-axis functioning.

On the three daily report weekdays, participants self-collected saliva samples at four timepoints (i.e., early morning, late morning, afternoon, evening). During the week prior to data collection, a researcher met with the families to provide instruction on saliva sampling and storage procedures, and to review the use of saliva collection equipment (labeled 5 mL screw-cap cryogenic vials, straws, thermoses, reminder beepers). Couples were instructed not to eat or drink anything in the half hour preceding saliva collection. If they indicated on their forms that they had eaten during that time period, that sample was eliminated from analyses. Couples also recorded the time of each sampling[9], as well as any medications consumed or cigarettes smoked preceding saliva collection. They were asked to store their saliva vials in thermoses when at work, and to transfer the vials to their refrigerator upon returning home. Saliva samples were picked up from participants the following day, and frozen and shipped under climate-controlled conditions to Salimetrics, a research facility specializing in saliva immunoassay testing.

A time-adjusted evening level was computed for each of the three days' cortisol that estimates cortisol values at 8 p.m. in order to adjust for slightly different evening sampling times[10]. I calculated a daily slope value by subtracting the cortisol at 8 p.m. value from the early morning sample value; the mean of these daily slope values is used as an indicator of HPA-axis function. A natural log transformation was performed on the cortisol data to correct for positive skewness. Wives (M = -.87, SD = .50) did not differ significantly from their husbands (M = -.83, SD = .38) on average cortisol slopes ($t(23) = .32$, *NS*).

Emotional Distress

[9] Mean collection times were 6:25 am (early morning), 12:20 pm (late morning), 4:30 pm (afternoon) and 10:10 pm (evening). The standard deviation of collection time across all participants was largest in the afternoon (87 minutes) and smallest in the morning (49 minutes).

[10] We regressed logged afternoon and evening cortisol values by collection time to plot a linear slope that was then used to estimate cortisol levels at 8 p.m. for each participant on each of the 3 days of the study.

Two measures of emotional distress were used: depressive symptoms and neuroticism.

Depressive Symptoms. In a separate visit after the filming week, spouses completed the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), a widely used measure of depressive symptomatology during the past week for the general population. Spouses responded to 20 items such as "I thought my life had been a failure," "I felt sad," and "I felt that people disliked me" on a scale of 0 (rarely or none of the time) to 3 (most or all of the time). A total score of depressive symptomatology was computed by summing all 20 item scores, with a possible range of 0 to 60. Higher scores indicate more distress and the conventional cut-off for depression is a score of 16. The CES-D has been extensively used and validated, with a Cronbach's alpha of .87-.89 and adequate test-retest reliability (Hann, Winter, & Jacobsen, 1999). In this study, wives (M = 8.40, SD = 6.91) and husbands (M = 8.94, SD = 6.62) did not differ on their depressive symptoms ($t(29) = -.06$, *NS).* Of note, 11 of the 60 participants received scores above the cut-off for depression, suggesting that clinically significant levels of depression are indeed reflected by a subgroup of the participants.

Trait Neuroticism. Prior to the filming week, couples completed the 12-item neuroticism scale from the NEO Personality Inventory Revised (NEO-PI-R; Costa & McCrae, 1992), designed as a general population measure of the underlying trait of neuroticism, which is defined as the tendency to experience negative emotional states and distress. Participants responded to items such as "Sometimes I feel completely worthless," "Under high stress I feel like I'm going to pieces," and "I often feel tense or jittery" on a 1 (strongly disagree) to 5 (strongly agree) scale. The NEO-PI-R has been extensively used and validated, and has been found to have a coefficient alpha of .92 (Piedmont, 1998). Wives (M = 24.27, SD = 4.98) scored significantly higher than their husbands (M = 15.47, SD = 7.81; $t(58) = 5.20$, $p \leq .05$) on trait neuroticism.

Job Stressors

During the three weekdays of saliva sampling, husbands and wives also completed daily reports at two timepoints during the late morning and afternoon on two different types of job stressors: workload and negative social interactions at work. Participants were instructed on how to complete the paper daily report packets during the week prior to data collection, and these daily report packets were picked up from the participants the following day. A composite job stressor score was derived from these two measures.

Workload. Husbands and wives completed the 5-item Busy Day Scale (Repetti 1989, 1993; Repetti & Wood, 1997) that inquires about the amount and pace of workload. Participants rate items such as "There were more demands on my time than usual" and "I felt like I barely had a chance to breathe" on a 1 (completely inaccurate) to 4 (completely accurate) scale. A previous study reported significant correlations between the Busy Day Scale and objective measures of daily workload (Repetti, 1989). Wives' mean workload (M = 2.37, SD = .64) did not differ significantly from their husbands' mean workload (M = 2.17, SD = .55; $t(27) = -1.08$, *NS)*[11]. These mean scores are used as an indicator of workload stressors experienced by the individual during the week of the study.

Negative social interactions at work. The couples also completed the 14-item Negative Social Interactions at Work Scale, which assesses negative feelings experienced at work during interactions with supervisors and coworkers. Participants rated 7 feelings (e.g., tense, pressured, annoyed) on a 4-point scale ranging from 1 (rarely) to 4 (almost always). Previous studies have shown this measure to correlate with other measures of social support at work and satisfaction with work relationships (Repetti, 1993). A marginal difference was found between wives' negative work interactions (M = 1.17, SD = .19) and their husbands' negative work interactions

[11] Two husbands did not complete daily job stressor data.

(M = 1.26, SD = .23; $t(27) = 1.96$, $p \leq .10$[1]. These mean scores are used as an indicator of negative work interactions experienced by the individual for that week.

Composite job stressor score. Given that the mean levels of both measures of job stressors across the three weekdays were highly correlated, $r(58) = .37$, $p<.01$, and because study hypotheses were not specific to the type of job stressor, a composite job stressor score was calculated. Because both job stressor measures use a comparable 4-point scale (1-4), I took the means of both measures across all six timepoints (two timepoints on each of three weekdays) to arrive at composite job stressor scores. This approach was taken by Wang, Repetti, and Campos (2011) in a prior analysis of job stress and social interaction on the two videotaped weekdays of the CELF study. The composite job stressor variable is used as an indicator of overall levels of stress experienced on the job for the study week. Husbands (M = 1.59, SD = .27) and wives (M = 1.68, SD = .33) did not differ on their composite job stressor scores, $t(27) = -1.11$, *NS*.

Results

Study 2 broadly addresses the general question, *"How is observed marital support behavior related to self-reports of marital satisfaction, emotional distress, and job stressors, and diurnal cortisol slopes indicative of HPA-axis function?"* Using multilevel models to account for the nesting of individuals within couples, Study 2 examines associations between the observed naturalistic support behavior from Study 1 with non-observational measures of health and well-being. I first address whether observed marital support behavior predicts marital satisfaction and diurnal cortisol slopes as an indicator of HPA-axis function. I then focus on how indicators of emotional distress (depressive symptoms and neuroticism) predict couple support behavior. Last, I examine whether everyday job stressors predict spouses' supportive behavior.

Data Analytic Strategy: Actor-Partner Interdependence Models (APIMS)

In order to account for the statistical interdependence within couples and to examine the unique actor and partner associations between support, health and well-being, the Actor-Partner Interdependence Model (APIM) was used for all analyses employing a multilevel framework and a two-intercept approach according to Kenny, Kashy, and Cook (2006). Data were structured according to the Dyadic Analysis Model described by Laurenceau and Bolger (2005), which is based on a model originally developed by Raudenbush, Brennan, & Barnett (1995). Models used input files that were organized with husbands' and wives' data on separate lines and nested within couple-level ID numbers. Dummy variables for husbands and wives were used to denote which actor the row of data belonged to. Separate variables indicated husbands' and wives' behavior for each couple. These multilevel models account for the within-couple dependence of observations for each of the members, control for both person-level and couple-level predictors, and adjust for measurement error in estimating within-couple correlations and in estimating proportions of variance explained by the model (Barnett, Brennan, Raudenbush, Pleck, & Marshall, 1995; Gareis, Barnett, & Brennan, 2003; Raudenbush et al., 1995).

All analyses were conducted by estimating multilevel models using Hierarchical Linear Modeling (HLM) Version 6.04 software. Person-level outcome variables were entered at Level 1 (person-level model), with separate intercepts for husbands and wives. These Level 1 intercepts were then modeled as outcome variables at Level 2 (couple-level model), with husband and wife variables modeled as Level 2 predictors in order to specify unique actor and partner effects. Depending on the specific research question and the conceptual direction of effects, the marital support variables or the health and well-being variables for each question could be modeled at Level 1 or at Level 2. Specifically, marital satisfaction and diurnal cortisol

are modeled as outcomes predicted by marital support behavior, and depressive symptoms, neuroticism, and job stress are tested as predictors of marital support behavior.

Level-1 Model

$Y_{ij} = \beta_{1j}(\text{Husband dummy}) + \beta_{2j}(\text{Wife dummy}) + R_{ij}$

Level-2 Model

$\beta_{1j} = \gamma_{10} + \gamma_{11}\ (\text{Husband Predictor}) + \gamma_{12}\ (\text{Wife Predictor}) + U_{1j}$

$\beta_{2j} = \gamma_{20} + \gamma_{21}\ (\text{Husband Predictor}) + \gamma_{22}\ (\text{Wife Predictor}) + U_{2j}$

Where

Y_{ij} = the person-level outcome variable

R_{ij} = individual error

β_{1j} = the intercept for the husband

β_{2j} = the intercept for the wife

γ_{10} = the average intercept across husbands

γ_{11} = the effect of husband predictor on the husband intercept (actor effect)

γ_{12} = the effect of wife predictor on the husband intercept (partner effect)

γ_{20} = the average intercept across wives

γ_{21} = the effect of husband predictor on the wife intercept (partner effect)

γ_{22} = the effect of wife predictor on the wife intercept (actor effect)

U_{1j} = the unique effect to the husband intercept associated with couple *j*

U_{2j} = the unique effect to the wife intercept associated with couple *j*

All HLM results reported here represent the final estimation of fixed effects with robust standard errors. The restricted maximum likelihood method of estimation was used. The Level 1 dummy variables were entered uncentered, and all Level 2 predictor variables were centered around the overall mean (i.e., grand-mean centered).

Observed Marital Support Behavior as a Predictor of Marital Satisfaction

Analyses broadly addressed the question, "Does observed marital support behavior predict marital satisfaction?" Marital satisfaction was modeled as the person-level outcome variable at Level 1, and the observed marital support behaviors were modeled as couple-level predictor variables at Level 2 in three separate models (see Table 1).

Research Question #1: Does more support received from one's partner predict greater marital satisfaction for both spouses? Studies have identified strong links between marital satisfaction and support receipt (e.g., Acitelli & Antonucci, 1994; Julien & Markman, 1991). Based on this work, I predict that more observed support received from a spouse would be linked with higher marital satisfaction for both the receiver and provider. Findings shown in the top third of Table 1 provide no support for this hypothesis; of the 4 associations tested, analyses indicate null associations between the proportions of support received and self-reported marital satisfaction for both spouses.

Research Question #2: Do more support offers to one's partner predict greater marital satisfaction for both spouses? Laboratory observation of couple support processes has found positive associations between the number of supportive behaviors provided to a spouse and self-reports of marital satisfaction (Cutrona & Suhr, 1994). While these prompted provisions of support studied in the lab do not clearly correspond to the unsolicited offers of support observed

in my study, I hypothesized that more spontaneous offers of support to one's partner in the context of everyday life would be linked with greater marital satisfaction. This hypothesis was not supported by findings reported in the middle section of Table 1; of the 4 associations tested, analyses indicate null associations between the proportions of support offers and self-reported marital satisfaction for both members of the couple.

Research Question #3: Does more support solicitation from one's partner predict lower marital satisfaction for both spouses? This research question predicts that more support solicitations would be linked with lower marital satisfaction for both spouses, based on the reasoning that a greater proportion of support solicitations might reflect a spouse's unmet need for support as well as add pressure and burden to the partner, resulting in lower marital satisfaction scores for both members of a couple. As shown at the bottom of Table 1, of the 4 associations tested, one significant association provides partial support for this hypothesis. Higher rates of wives' solicitations of support from their husbands predicted lower reports of marital satisfaction by husbands ($\gamma(27) = -453.42$, $p \leq .05$); thus, when their wives solicited more support, husbands were less happy in their marriages

In summary, analyses examining how observed marital support behavior predicts self-reported marital satisfaction showed no significant linkages between rates of support receipt and rates of support offers with marital satisfaction. However, analyses suggest that wives' greater solicitations predict lower marital satisfaction scores for their husbands.

Observed Marital Support Behavior as a Predictor of Diurnal Cortisol Slope

Next, analyses addressed the question, "Does observed marital support behavior predict diurnal cortisol slopes?" Cortisol slope was modeled as the person-level outcome variable at

Level 1, and the observed marital support behaviors were modeled as couple-level predictor variables at Level 2 in three separate models (see Table 2).

Research Question #4: Does more support received from one's spouse predict steeper cortisol slopes for the receiver? Drawing on the allostatic load model (McEwen, 1998) that suggests steeper cortisol slopes to reflect healthier stress responding and blunted slopes to reflect compromised stress responding, and past self-report research indicating high perceived social support to be linked with steeper cortisol slopes (Sjögren, et al., 2006; Abercrombie, et al., 2004), it was hypothesized that receiving more support from one's spouse would predict steeper cortisol slopes for the receiver. As shown in the top section of Table 2, of the two associations tested, neither one showed support for this hypothesis.

Research Question #5: Do more support offers predict steeper cortisol slopes for one's partner? Again based on the allostatic load model, it was predicted that more support offers to one's spouse would be associated with steeper cortisol slopes for that spouse. Reported in the middle section of Table 2, neither of the two associations tested supported this hypothesis.

*Research Question #6: Do more support solicitations to one's spouse predict weaker cortisol slopes for that spouse? Be*cause support solicitations may act as demands or stressors for the spouse that provides the support, it was predicted that more support solicitations to one's spouse would predict weaker slopes for that spouse (the potential provider of support). Analyses show in the bottom portion of Table 2 reveal one marginally significant association indicating that wives' solicitations of support are negatively associated with husband's cortisol slopes; thus, when wives solicit more support from husbands, husbands show weaker stress responding.

Findings show almost no linkage between observed marital support behavior and spouses' diurnal cortisol slopes. One marginal finding suggests that when wives solicit more support from husbands, husbands show a weaker diurnal cortisol decline.

Depressive Symptoms as a Predictor of Observed Marital Support Behavior

Analyses also addressed the question, "Do depressive symptoms predict observed marital support behavior?" The observed marital support behaviors were modeled as the person-level outcome variables at Level 1 in three separate models, and depressive symptoms was modeled as the couple-level predictor variable at Level 2 in all three models (see Table 3).

Research Question #7: Do greater depressive symptoms predict more support received from one's spouse and less support provided to one's spouse? Coyne's (1976) interactional theory of depression states that depressed individuals are more likely to seek reassurance and support from their partners than non-depressed individuals, but that depressed individuals are simultaneously less able to respond to the needs of others. It is hypothesized that a spouse reporting more depressive symptoms would receive more support from their partner while also providing less support to their partner (i.e., their partner would receive less support), and that this would be particularly true for wives' depressive symptoms. Analyses partially support this hypothesis. As shown in the top third of Table 3, wives reporting more depressive symptoms received more support from their husbands ($\gamma(27) = 0.0019$, $p \leq .001$). However, there was no link between wives' depression and support received by their husbands. In addition, husbands' depressive symptoms did not predict support received by husbands and wives.

Research Question #8: Do greater depressive symptoms predict fewer offers of support to one's spouse but more offers of support from one's spouse? Based on Coyne's (1976)

interactional theory of depression, it was predicted that a spouse reporting more depressive symptoms would be less equipped to offer support to their partner. However, it was also hypothesized that individuals high on depressive symptoms would receive more offers of support from their partner. With regard to sex differences, I expected that these purported relationships would be stronger for wives' compared to husbands' depressive symptoms. The model testing these predictions is presented in the middle portion of Table 3. Findings suggest partial support for this hypothesis. Both husbands' ($\gamma(27) = -0.00032$, $p \leq .001$) and wives' ($\gamma(27) = 0.00061$, $p \leq .01$) levels of depressive symptoms predicted husbands' offers of support to their wives. Specifically, husbands offered less support to their wives when they themselves reported more depression; however, husbands offered more support to their wives when their wives reported more depression.

Research Question #9: Do greater depressive symptoms predict more solicitations of support from one's spouse? Based on Coyne's (1976) interactional theory of depression, it was hypothesized that a spouse reporting more depressive symptoms would solicit more support from their partner, whereas their partner would solicit less support. I especially expected to find these predictive relationships for wives' depressive symptoms. Reported in the bottom section of Table 3, analyses show that of the 2 associations tested, only wives' depressive symptoms predicted more of their own support solicitations from husbands ($\gamma(27) = 0.001258$, $p \leq .01$).

In conclusion, analyses reveal an interesting pattern of findings primarily for the effect of wives' depression on observed marital support behavior. Wives' depressive symptoms shape how much support they receive from their husbands, which appears to be due both to husbands offering more support as well as wives soliciting more support when wives report more

depressive symptoms. In addition, when husbands report greater depression, they offer less support to their wives.

Trait Neuroticism as a Predictor of Observed Marital Support Behavior

Next, analyses addressed the question, "Does trait neuroticism predict observed marital support behavior?" The observed marital support behaviors were modeled as the person-level outcome variables at Level 1 in three separate models, and trait neuroticism was modeled as the couple-level predictor variable at Level 2 in all three models (see Table 4).

Research Question #10: Does higher trait neuroticism predict more support received from one's spouse? Based on literature suggesting that individuals high on neuroticism experience greater exposure and reactivity to stressful events (e.g., Bolger & Schilling, 1991; Bolger & Zuckerman, 1995), and tend to use more support (Connor-Smith & Flachsbart, 2007), it was hypothesized that higher trait neuroticism would predict more support received from one's spouse, and that this would be especially the case for husbands' neuroticism predicting more support received from wives. Results are reported in the top third of Table 4. Analyses indicate that when husbands report higher trait neuroticism, they also report receiving more support from their wives ($\gamma(27) = 0.00092$, $p \leq .05$); however, this was not found for the association between wives' trait neuroticism and support received from their husbands.

Research Question #11: Does higher trait neuroticism predict more offers of support from one's spouse? It was predicted that high neuroticism individuals would receive more offers of support from their spouses who may be trying to help their more stressed and reactive partners. As before, I expected this association to be stronger for husbands' neuroticism compared to wives' neuroticism. As shown in the middle portion of Table 4, findings show one

marginal association indicating a positive relationship between husbands' trait neuroticism and wives' offers of support to husbands ($\gamma(27) = 0.00031$, $p \leq .10$). The association between wives' trait neuroticism and husbands' offers of support to wives was not significant.

Research Question #12: Does higher trait neuroticism predict more solicitations of support from one's spouse? Based on the Connor-Smith and Flachsbart (2007) meta-analysis showing high neuroticism individuals to engage in more support-seeking, it was hypothesized that higher trait neuroticism would predict more solicitations of support from one's partner. In addition, it was expected that this would be particularly true for husbands' neuroticism predicting more solicitations of support by husbands from their wives. Analyses shown in the bottom section of Table 4 suggest that husbands' trait neuroticism predicts more solicited support by husbands ($\gamma(27) = 0.0006$, $p \leq .05$); however, this was not shown for wives' trait neuroticism and wives' solicitations of support.

In summary, findings indicate that for husbands, self-reports of trait neuroticism predict more support received from their wives. This appears to be due to both husbands soliciting more support from their wives as well as wives offering more support to their husbands when husbands report greater neuroticism.

Job Stress as a Predictor of Observed Marital Support Behavior

Last, analyses addressed the question, "Does job stress predict observed marital support behavior?" The observed marital support behaviors were modeled as the person-level outcome variables at Level 1 in three separate models, and job stress was modeled as the couple-level predictor variable at Level 2 in all three models (see Table 5).

Research Question #13: Does greater job stress predict more support received from one's spouse? Given prior research showing spouses (wives in particular) to increase support on more stressful days for husbands (Bolger et al., 1989; Neff & Karney, 2005), it was expected that greater job stress would predict more support received from one's spouse and that this would be particularly true for the effects of husbands' job stress on support received from wives. Findings reported in the top section of Table 5 show that wives' job stress predicted wives' receiving more support from husbands ($\gamma(25) = 0.029$, $p \leq .001$); however, this association was not replicated for husbands' job stress and husbands' receipt of support.

Research Question #14: Does greater job stress predict more offers of support from one's spouse? I also predicted that greater job stress would predict more offers of support from one's spouse, and in particular, for husbands' job stress and wives' offers of support. As reported in the middle portion of Table 5, findings show that wives' job stress positively predicted offers of support from their husbands ($\gamma(25) = 0.011$, $p \leq .01$). This pattern was not shown for husbands' job stress and wives' support offers.

Research Question #15: Does greater job stress predict more solicitations of support to one's spouse? Last, it was hypothesized that greater job stress would predict more solicitations of support to one's spouse. It was expected that this connection would be stronger for husbands' job stress and solicitations of support. As shown in the bottom section of Table 5, findings indicate that wives' job stress predicted more of their own solicitations of support from their husbands ($\gamma(25) = 0.018$, $p \leq .001$. For husbands, this association was non-significant.

In conclusion, results indicate that when wives report greater job stress, wives receive more support from their husbands. This receipt of support is driven both by husbands offering more support to their wives, as well as wives soliciting more support from their husbands, when

wives report more job stress. Interestingly, this pattern of findings was not replicated for husbands' job stress, suggesting that counter to previous research showing wives to increase their support behavior on days in which their husbands experienced greater daily stress (e.g., Neff & Karney, 2005), husbands in the CELF sample appeared to be more responsive to wives' job stress during the week of the study.

Discussion

This study examined associations between naturalistic couple support behavior and measures of marital satisfaction, emotional distress, job stressors, and diurnal cortisol slopes. These analyses are the first in the field to investigate these links using observations of naturally-occurring support behaviors. Not only was the receipt (and provision) of support examined, but also the mode by which the supportive interaction was initiated, whether through offers or solicitations of support. As the findings discussed below show, this distinction is one that heretofore has not received attention due to pre-existing conceptual frameworks as well as the methodological limitations of laboratory observation and self-report methods. However, this study – capitalizing on novel naturalistic observations of couple interactions – demonstrates the importance of examining how support arises in its linkages with health, well-being, and stress. Analyses also provided the opportunity to explore sex differences in these connections. Findings showed more evidence for marital support behavior as an outcome variable for emotional distress and job stress. Very limited support demonstrated that couple support interactions predicted diurnal cortisol slopes and marital satisfaction.

Emotional Distress as a Predictor of Marital Support Behavior

With regard to whether depressive symptoms predict marital support behavior, findings reveal several interesting associations in support of Coyne's (1976) interactional theory of depression that posits that depressed individuals engage in more support-seeking behavior but are also less able to provide support to their spouses. Husbands' depressive symptoms predicted fewer offers of support to wives, whereas wives' depressive symptoms predicted the receipt of more support from their husbands that seemed to arise from the active contributions of both spouses – husbands offering more support to their dysphoric wives and dysphoric wives soliciting more support from their husbands. The fact that depressive symptoms were linked with the greater receipt of support for wives is consistent with the notion that more dysphoric individuals require more support and that their spouses appear to provide accordingly.

This finding is striking in that the sample was not a clinically depressed sample; thus, even non-clinical levels of depressive symptoms appear to be relevant for marital interactions. Coyne's (1976) interactional theory suggests that with increasing time, depressed individuals' interactions with other ultimately lead to hostility, resentment, and rejection. For this study, this would indicate less supportive behavior over time. Perhaps if the sample consisted exclusively of couples in which one member met clinical levels of depression, and the couples were married for longer periods of time (the median duration of marriage in this sample was 13 years), these associations would look different and suggest decreases in supportive behavior.

Findings also showed that husbands higher on neuroticism received more support from their wives, and that this seemed driven by both more solicitations of support by husbands as well as more offers of support by wives. Consistent with prior work indicating that high neuroticism individuals tend to use more support (Connor-Smith & Flachsbart, 2007), these

results suggest that these individuals subsequently require and seek more support as well as have spouses who are responsive to their distress through increased spontaneous offers of support. Thus, analyses indicate a similar pattern of effects for trait neuroticism as well as depressive symptoms, whereby more distressed individuals received higher rates of support both through increases in their own solicitations of support as well as in their partners' offers of support.

I note that there appears to be a gendered pattern in these findings, whereby the effects of depressive symptoms on supportive behavior were specific to wives' depressive symptoms, whereas the effects of trait neuroticism on supportive behavior were specific to husbands' neuroticism. Of course, this may be due to the small sample of 30 heterosexual couples and the related low power to detect effects. However, it is interesting to consider that there is evidence suggesting that the influence of depressive symptoms on marital interaction may be most relevant for wives' depression (Rehman et al., 2008). The majority of studies in this area have looked at depressed wives, and for women – who are socialized to be more caring and relationship-oriented (e.g., Cross & Madson, 1997; Eagly, 2009) – the effects of depression may have more bearing on relationship dynamics in the family. Consistent with this, Jacob and Johnson (1997) have shown that families with a depressed mother were characterized by greater negativity and less positivity than families with a depressed father. For neuroticism, on the other hand, it may be that husbands' neuroticism has more weight for family relationship dynamics. In a prior analysis of the CELF couples' social interactions, Wang and colleagues (2011) found that neuroticism moderated the links between job stress and observed social behavior, but only for the men in the study. Given that a strong gender difference on neuroticism has been documented in the literature (e.g., Lynn & Martin, 1997), perhaps husbands' neuroticism has a stronger

influence on couple supportive behavior given that it is a more gender-atypical quality that may signal greater distress for husbands.

Job Stress as a Predictor of Marital Support Behavior

Contrary to prior work that has shown wives in particular to be more responsive to husbands' daily stress by increasing provisions of support (Bolger et al., 1989; Neff & Karney, 2005), my analyses indicate that husbands appeared to adjust their supportive behavior towards wives in relation to wives' job stress, whereas no such association was found for the effect of husbands' job stress on wives' supportive behavior. Specifically, wives' job stress predicted more receipt of support by wives from husbands due to more solicitations of support by wives as well as more offers of support by husbands. Thus, it wasn't the case that more stressed wives simply solicited more support; their husbands also offered more unprompted support. These findings are somewhat counterintuitive and further work is needed in the area. Perhaps these findings underscore an important difference between research methodologies in terms of the kind of information that is captured; the daily report studies cited above may be tapping support that is more visible or easily recalled by spouses, whereas the support objectively observed in this study – although explicit – taps a broader class of support that also includes support less likely to be recalled as "support." While the Neff and Karney (2005) study also observed support transactions in the laboratory, finding that wives provided more positive support to their husbands when husbands discussed more severe stressors, that study did not report a difference in the *amount* of support provided. Thus, the present data suggest that the amount of support received by wives, as well as the active supportive behavior of both spouses, seem responsive to wives' job stress.

Marital Support Behavior as a Predictor of Marital Satisfaction

Surprisingly, there was almost no evidence that supportive marital behavior in everyday contexts predicted marital satisfaction, running counter to a strong research tradition linking marital satisfaction with self-reported and lab observations of support. There was no link between marital satisfaction and the rate of received support or the rate of offered support; thus, higher rates of received (and provided) support and higher rates of spontaneous offers of support did not translate into perceptions of happier marriages. This finding (or lack of finding) may speak to differences between the support behaviors observed in the laboratory and behaviors observed in natural environments. It may be that support is such a typical component of daily life, necessary to running a household and raising a family, that the receipt and provision of support does not carry the significance that it does when spouses are asked to engage in support interactions about targeted personal problems in the lab. Certainly, the kind of support prompted in laboratory interactions appears to be more likely to elicit emotional support (e.g., Pasch & Bradbury, 1998), compared with the everyday instrumental support transactions of daily life that were more commonly observed in the current study.

However, one significant association suggests that the more wives solicited support from their husbands in particular, the less satisfied husbands were in their marriages. Tentatively, this finding lends some support to the notion that solicitations of support may be experienced as burdensome or annoying, or at the very least, as detracting from feelings of intimacy and closeness in the relationship (Eckenrode & Wethington, 1990). Prior qualitative work with the CELF sample has found the largely unspoken and smooth routinized cooperation between spouses in the management of household tasks to be the most efficient and effective (Klein et al., 2007). Perhaps a relatively higher rate of support solicitations reflect underlying ruptures in such

coordination between spouses that would be more strongly related with marital satisfaction. It is also interesting to note that while wives' support solicitations negatively predicted husbands' marital satisfaction, husbands' solicitations did not negatively predict wives' marital satisfaction. This may reflect an archetype in popular culture of the "nagging wife" and the influences of her support-seeking behavior on husbands' perceptions of the relationship, whereas husbands who require more support do not appear to be perceived in similar terms.

Marital Support Behavior as a Predictor of HPA-Axis Functioning

Overall, analyses show no significant associations between marital support behavior and diurnal cortisol slopes that may be indicative of chronic stress burden on the HPA-axis (McEwen, 1998). One marginally significant association indicated that wives' solicitations for support predicted weaker cortisol slopes for husbands, supporting the notion that solicitations for support may be experienced by a partner as physiologically burdensome or stressful; however, given that this was the sole marginal finding among the three models tested, this interpretation remains tentative and further work is needed in this area. The general lack of significant associations detected in the current analysis suggest that the links between perceived social support and steeper cortisol slopes found in past research (Sjögren et al., 2006; Abercrombie et al., 2004) may be specific to self-report methodology and affected by confounding variables (e.g., personality) that my inflate the association between perceptions of support and HPA-axis function. On the other hand, it may simply be that the explicit everyday support exchanges observed in this study do not share a strong linkage with the parameter of HPA-axis function assessed in this analysis.

Conclusion

This study is the first of its kind to examine how couple support interactions that occur in everyday contexts outside of the laboratory are related with various indicators of health and well-being, including emotional distress, job stress, marital satisfaction, and diurnal cortisol slopes. By capitalizing on naturalistic observations to assess supportive behavior, these data bear remarkable advantages compared to the self-report and laboratory observation methodologies more commonly used in the field to measure marital support. Not only does naturalistic observation bypass the significant short-comings of self-report studies that contend with recall and response biases, but naturalistic observation also improves upon laboratory observation approaches by permitting direct inspection of behavior as it spontaneously unfolds, unprompted and outside of the controlled environment of the laboratory, thus increasing the ecological validity of the findings. At the same time, naturalistic observation bears methodological and conceptual complexities and "noise", and lacks the precision of self-report and laboratory observation methodologies that can structure and target specific behaviors and processes uniformly across participants. Thus, these findings are meant to add new insights to an already established body of literature on the implications of couple support behavior for health and well-being. Certainly, the use of self-reports for emotional distress, marital satisfaction, and job stress, in conjunction with salivary cortisol sampling and naturalistic observations of couple interactions, reflect an integrated methodological approach that provides a multidimensional view of the processes of interest.

One main contribution of this research is that it capitalizes on naturalistic observation to examine how couples initiate support in unstructured circumstances, and moves past the traditional focus on simply whether support was provided and received. By expanding what is

means to "provide" and "receive" support, this study provides a unique vantage point into the mechanisms by which support is enacted. In particular, by identifying and separating out support that arises because of an unprompted offer of support versus support that emerges due to a solicitation for support, I was able to explore how these different modes of support initiation were predictive of and predicted by various indicators of health, well-being, and other aspects of everyday life.

The findings provide interesting glimpses into how emotional distress and job stress impact observed couple support behavior in naturalistic settings, shining a spotlight onto sex differences in these linkages. Both depressive symptoms and trait neuroticism showed clear and expected predictive associations with couple support behavior, and a marked sex difference emerged whereby wives' depressive symptoms and husbands' trait neuroticism, in particular, appeared to predict the supportive behavior of both spouses. In addition, wives' job stress (but not husbands' job stress) also predicted couples' supportive behavior. In sum, these findings provide strong evidence for the notion that psychological and emotional well-being – whether depressed mood, a more anxious personality, or the subjective experience of stress from work – impacts the degree to which individuals seek support as well as the degree to which their spouses adjust their support provision in response to the individuals' need.

On the other hand, my results indicate that couple support behavior played a significantly smaller role as a predictor of marital satisfaction and diurnal cortisol slope; the predictive relationships tested were largely null. However, the two associations that emerged hint at an interesting pattern where wife solicitations to their husbands were linked with poorer outcomes for husbands – poorer marital satisfaction and a weaker diurnal cortisol slope profile. Albeit preliminary, these findings put forward the notion that solicitations of support, and in particular

solicitations of support from wives, may act as a drain on a partner's resources that contribute to less satisfaction with the relationship as well as compromised stress physiology.

Some limitations of the study should be noted. First and foremost, the sample was small (30 couples), limiting the power to detect significant effects, and conclusions about the associations between support processes and the individual variables used in this study remain preliminary and warrant further study. In addition, given the small sample size and reduced power, it was not prudent to explore moderators in these predictive relationships; this would be an interesting area of future investigation. Last, this analysis was cross-sectional in nature, and thus, cannot speak to how trajectories of support behavior are linked with individual characteristics.

Study 1 Table 1. ***Social Support Codes from Marital Support Coding Manual***

Social Support Coding	
Instigated by a Child	1. Yes
	2. No
Continuation Clip	1. Yes (interaction continues into another clip)
	2. No
Support Roles	1. Provider (Husband,Wife)
	2. Receiver (Husband,Wife)
Support Initiation	1. Solicitation of support by Receiver
	2. Offer of support by Provider
	3. Acknowledgment of support by Receiver [a]
Support Type	1. Instrumental/Informational
	2. Emotional
	3. Both [a]
Anchor Quality	1. Positive/Neutral
	2. Negative [b]
	3. Mixed [b]
Context Found	1. Yes, Found
	2. Not found in the 10 minutes before/after anchor [c]
	3. No opportunity due to Receiver [c]
	4. No opportunity due to on-screen Other [c]
Context Quality	1. Positive/Neutral
	2. Negative [b]
	3. Mixed [b]
Descriptive Information	1. Start and end times
	2. Written description of what is happening
	3. Others present

[a] These codes were so infrequently coded (Acknowledgement n = 6, Both n = 3) that they were dropped during analyses.

[b] Mixed quality codes (anchor/initiation and context/response) were combined with negative quality codes reflecting support behaviors that had any negative component and were not clearly positive/neutral.

[c] The three different codes for reasons why the context was not found (not found in the 10 minutes before/after anchor, no opportunity due to Receiver, no opportunity due to on-screen Other) were combined to reflect a general "Context not found" category.

Study 1 Table 2. ***Capitalization Codes from Marital Support Coding Manual***

Capitalization Coding	
Instigated by a Child	1. Yes
	2. No
Continuation Clip	1. Yes (interaction continues into another clip; i.e., longer interaction)
	2. No
Capitalization Roles	1. Provider (Husband, Wife)
	2. Receiver (Husband, Wife)
Capitalization Initiation	1. Disclosure of event by Receiver
	2. Inquiry about event by Provider
Context Found	1. Yes Found
	2. Not Found
Quality of Context	1. Active-Constructive (i.e., enthusiastically supportive)
	2. Passive-Constructive (i.e., silently supportive)
	3. Active-Destructive (i.e., finding a problem or downside)
	4. Passive-Destructive (i.e., disinterested)
Descriptive Information	1. Start and end times
	2. Written description of what is happening
	3. Others present

Study 1 Table 3. ***Formal Coding Inter-Rater Reliability Scores for 30-Second Couple Together Clips (N = 10,030; 30 families)***

Code	Overall		Kappa (based on coding pairs)			Percent Agreement (based on coding pairs)		
	Kappa	**Percent**	**Range**	**Median**	**Mean**	**Range**	**Median**	**Mean**
Anchor Found (yes vs no)	.74	.98	.31 [a] - .96	.73	.69	.88 – 1.0	.98	.97
Support Receiver (wife vs husband)	.95	.98	.50 – 1.0	1.0	.90	.75 – 1.0	1.0	.97
Continuation (yes vs no)	.83	.95	.60 – 1.0	.81	.84	.80 – 1.0	1.0	.98
Instigated by Child (yes vs no)	.81	.99	.59 – 1.0	1.0	.93	.86 – 1.0	1.0	.99
Initiation (solicited, acknowledged, offered)	.87	.94	.38 [b] – 1.0	1.0	.88	.67 – 1.0	1.0	.95
Type (instrumental, emotional)	.94	.98	.57 – 1.0	1.0	.93	.83 – 1.0	1.0	.99
Quality (positive, negative, mixed)	.73	.97	.49 – 1.0	1.0	.83	.67 – 1.0	1.0	.97
Context Found (yes vs no)	.76	.96	.71 – 1.0	.85	.86	.83– 1.0	1.0	.97
Context Quality (positive, negative, mixed)	.52	.91	.64 – 1.0	.88	.85	.58 – 1.0	1.0	.93

[a] The .31 was based on F31 that only had 80 clips.

[b] The .38 was based on F30 where coders agreed on 15/20 criteria codes (75% agreement).

Study 1 Table 4. Couple-Level Proportions Computed from Support Codes

Name of Couple-Level Proportion Variable	Description
Overall Supportiveness proportion	Rate of support interaction occurrence based on the number of couple clips for each couple as the denominator; answers the question, "How supportive did this couple tend to be?"
Support Interaction proportion variables	Rates of all support behaviors based on the number of support interactions for each couple as the denominator; answers the question, "What was the rate of the support behavior (such as instrumental or emotional support) given that support interactions occurred?" For descriptives, see Table 10.
Couple Together proportion variables	Rates of all support behaviors based on the number of couple clips for each couple as the denominator; answers the question, "What was the rate of the support behavior (such as solicitations or offers of support) given that the couple was together?" For descriptives, see Table 12.
Husband Support Interaction proportion variables Wife Support Interaction proportion variables	Rates of Received, Solicited, and Offered support behaviors computed for husbands and wives separately based on two categories of denominators (number of support interactions for each couple; number of couple clips for each couple); twelve variables in total; answers the question, "What was the rate of support received (or solicited or offered) by husbands versus wives given that support interactions occurred and given that couples were together?" For descriptives, see Table 11.
Husband Support-Type proportion variables Wife Support-Type proportion variables	Rates of Instrumental and Emotional support behaviors computed for husbands and wives separately based on two categories of denominators (number of support interactions for each couple; number of received, solicited, and offered support interactions computed separately for husbands and for wives); twelve variables in total; answers the question, "What was the rate of instrumental support received (or solicited or offered) by husbands versus wives?" For descriptives, see Table 12.
Husband Support-Initiation proportion variables Wife Support-Initiation proportion variables	Rates of Solicitation and Offer behaviors examined for husbands and wives separately based on the number of couple clips for each couple as the denominator; four variables in total; answers the question, "What was the rate of support solicitations and support offers made by husbands versus wives given that the couple was together?"

Study 1 Table 5. ***Frequencies and Proportions of Support Variables at the Level of Individual Clips***

Support Variable	Frequency	Proportion
Anchor Found		
Yes	432	0.04 [b]
No	9598	0.96 [b]
Continuation		
Yes	76	0.17 [c]
No	356	0.83 [c]
Instigated by Child		
Yes	15	0.04 [c]
No	417	0.96 [c]
Support Receiver		
Husband	147	0.34 [c]
Wife	285	0.66 [c]
Anchor Initiation		
Solicited	300	0.69 [c]
Acknowledged	6	0.01 [c]
Offered	126	0.29 [c]
Support Type		
Instrumental/Informational	331	0.77 [c]
Emotional	98	0.23 [c]
Both	3	0.01 [c]
Anchor Quality		
Positive	404	0.94 [c]
Negative	6	0.01 [c]
Mixed	22	0.05 [c]
Negative/Mixed[a]	28	0.06 [c]
Context		
Found	387	0.90 [c]
Not observed	33	0.08 [c]
No opportunity	8	0.02 [c]
Technical Difficulties	4	0.01 [c]
Context Quality		
Positive	336	0.87 [d]
Negative	20	0.05 [d]
Mixed	31	0.08 [d]
Negative/Mixed[a]	51	0.13 [d]

[a] Denotes a combination of the negative and mixed codes reflecting all clips that had some negative element.
[b] Denotes proportions calculated with a denominator of 10,030 couple clips.
[c] Denotes proportions calculated with a denominator of 432 anchor clips.
[d] Denotes proportion calculated with a denominator of 387 anchor clips for which context had been observed and context quality was coded.

Study 1 Table 6. ***Frequencies and Proportions of Support Variables at the Level of Support Interactions***

Support Variable	Frequency	Proportion
Instigated by Child		
Yes	14	0.04 [b]
No	342	0.96 [b]
Support Receiver		
Husband Receiver	122	0.34 [b]
Wife Receiver	234	0.66 [b]
Support Initiation		
Solicited	243	0.68 [b]
Acknowledged	4	0.01 [b]
Offered	109	0.31 [b]
Support Type		
Instrumental	289	0.81 [b]
Emotional	64	0.18 [b]
Both	3	0.01 [b]
Anchor Quality		
Positive	339	0.95 [b]
Negative	2	0.01 [b]
Mixed	15	0.05 [b]
Negative/Mixed[a]	17	0.05 [b]
Context		
Found	319	0.90 [b]
Not observed	26	0.07 [b]
No opportunity	7	0.02 [b]
Technical Difficulties	4	0.01 [b]
Context Quality		
Positive	271	0.85 [c]
Negative	14	0.04 [c]
Mixed	34	0.11 [c]
Negative/Mixed[a]	48	0.15 [c]

[a] Denotes a combination of the negative and mixed codes reflecting all interactions that had some negative element.

[b] Denotes proportions calculated with a denominator of 356 support interactions.

[c] Denotes proportions calculated with a denominator of 319 support interactions for which context had been observed and context quality was coded.

Study 1 Table 7. ***Chi Squares and Fisher's Exact Test Table Testing Co-Occurrence of Support Variables at the Level of Support Interactions***

	1.	2.	3.	4.	5.	6.	7.	8.
Day Type (Weekday v. Weekend)	-							
Continuation (Yes v. No)	.02	-						
Support Receiver (Husband v. Wife)	.13	0	-					
Support Initiation (Solicited v. Offered)	0	.02	13.31***	-				
Support Type (Instrumental v. Emotional)	.52	19.37***	2.65	5.00*	-			
Anchor Quality (Positive v. Negative/Mixed)	1.64	p = .634[b]	.12	p =.172[b]	p =.152[b]	-		
Context Quality (Positive v. Negative/Mixed)	.84	0	.03	0	.02	p=.358[b]	-	
Context Found (Yes v. No)	.07	p = .035[b]	1.06	1.99	.20	p=.455[b]	a	-

* $p < .05$ *** $p < .001$

[a] Denotes that a chi square analysis was not run to test whether frequencies of context quality differed depending on whether the context was found. This is because context quality could only be coded if the context was found (and was not coded if the context was not found).

[b] Denotes that the Fisher Exact Probability Test was used instead of chi square because at least one of the cell frequencies contained fewer than 5 observations, violating a requirement for a valid chi square test. The Fisher Exact Probability Test does not produce a test statistic but produces a p-value.

Study 1 Table 8. ***Chi Squares and Fisher's Exact Test Table Examining Patterns of Sex Differences in Support Variables at the Level of Support Interactions***

	Soliciter Sex (Husband v. Wife)	Offerer Sex (Husband v. Wife)
Day Type (Weekday v. Weekend)	.03	.21
Continuation (Yes v. No)	.43	p = .141[a]
Instigated by Child (Yes v. No)	p = .628[a]	.01
Support Type (Instrumental v. Emotional)	4.37*	.17
Anchor Quality (Positive v. Negative/Mixed)	.94	p = .521[a]
Context Found (Yes v. No)	0	.45
Context Quality (Positive v. Negative/Mixed)	.03	.04

* $p < .05$

[a] Denotes that the Fisher Exact Probability Test was used instead of chi square because at least one of the cell frequencies contained fewer than 5 observations, violating a requirement for a valid chi square test. The Fisher Exact Probability Test does not produce a test statistic but produces a p-value.

Study 1 Table 9. ***Frequencies of Support Variables at the Level of Couple Support Interactions***

Support Variable	Mean	SD	Median	Min	Max
Support Interactions	11.87	6.69	10.00	4.00	28.00
Continuation	1.50	2.00	1.00	0.00	7.00
Instigated by Child	0.47	0.82	0.00	0.00	3.00
Support Receiver					
Husband Receiver	4.07	2.29	4.00	1.00	11.00
Wife Receiver	7.80	6.64	5.50	1.00	24.00
Support Initiation					
Solicited	8.07	5.90	6.50	0.00	23.00
Acknowledged	0.13	0.43	0.00	0.00	2.00
Offered	3.63	1.97	4.00	0.00	10.00
Support Type					
Instrumental	9.63	5.35	8.50	2.00	25.00
Emotional	2.13	2.79	1.00	0.00	10.00
Both	0.10	0.31	0.00	0.00	1.00
Anchor Quality					
Positive	11.23	6.45	10.00	3.00	28.00
Negative	0.07	0.25	0.00	0.00	1.00
Mixed	0.57	0.94	0.00	0.00	4.00
Negative/Mixed[a]	0.63	1.13	0.00	0.00	5.00
Context					
Found	10.63	5.70	9.00	4.00	24.00
Not observed	0.87	1.07	1.00	0.00	4.00
No opportunity	0.23	0.50	0.00	0.00	2.00
Technical Difficulties	0.13	0.51	0.00	0.00	2.00
Context Quality					
Positive	9.03	4.87	8.50	2.00	23.00
Negative	0.47	0.94	0.00	0.00	4.00
Mixed	1.13	1.53	1.00	0.00	6.00
Negative/Mixed[a]	1.60	2.19	1.00	0.00	10.00

[a] Denotes a combination of the negative and mixed codes reflecting all interactions that had some negative element.

Study 1 Table 10. ***Proportions of Support Variables at the Level of Couple Support Interactions***

	Support Interaction Proportion Variables (based on no. of support interactions p/couple)				
Support Variable	**Mean**	**SD**	**Med**	**Min**	**Max**
Continuation	0.11	0.15	0.06	0.00	0.60
Instigated by Child	0.04	0.08	0.00	0.00	0.29
Support Receiver					
Husband Receiver	0.41	0.23	0.38	0.06	0.80
Wife Receiver	0.59	0.23	0.62	0.20	0.94
Support Initiation					
Solicited	0.64	0.19	0.64	0.00	1.00
Acknowledged	0.01	0.02	0.00	0.00	0.10
Offered	0.35	0.19	0.36	0.00	1.00
Support Type					
Instrumental	0.82	0.18	0.88	0.40	1.00
Emotional	0.17	0.18	0.13	0.00	0.60
Both	0.01	0.02	0.00	0.00	0.11
Anchor Quality					
Positive	0.95	0.09	1.00	0.71	1.00
Negative	0.00	0.01	0.00	0.00	0.06
Mixed	0.05	0.08	0.00	0.00	0.29
Context					
Found	0.91	0.10	0.91	0.57	1.00
Not observed	0.06	0.07	0.06	0.00	0.29
No opportunity	0.02	0.03	0.00	0.00	0.14
Technical Difficulties	0.01	0.03	0.00	0.00	0.15
Context Quality					
Positive	0.86[a]	0.14	0.89	0.50	1.00
Negative	0.04[a]	0.07	0.00	0.00	0.25
Mixed	0.10[a]	0.12	0.08	0.00	0.50

[a]Denotes proportions calculated with a denominator reflecting the number of interactions when the context was found for each couple.

Study 1 Table 11. ***Sex Differences in Proportions of Support Variables at the Level of Couple Support Interactions***

	Husband					Wife					
Husband and Wife Support Interaction Proportion Variables	**Mean**	**SD**	**Med**	**Min**	**Max**	**Mean**	**SD**	**Med**	**Min**	**Max**	**paired samples *t*-test df=29**
Received Support [a]	0.41	0.23	0.38	0.06	0.80	0.59	0.23	0.62	0.20	0.94	-2.05*
Solicited Support [a]	0.22	0.16	0.20	0.00	0.60	0.42	0.24	0.43	0.00	0.81	-3.17**
Offered Support [a]	0.16	0.12	0.17	0.00	0.43	0.20	0.18	0.20	0.00	0.80	-0.93
Received Support [b]	0.02	0.01	0.01	0.00	0.06	0.03	0.02	0.02	0.00	0.07	-2.45*
Solicited Support [b]	0.01	0.01	0.01	0.00	0.04	0.02	0.02	0.01	0.00	0.05	-2.88**
Offered Support [b]	0.01	0.01	0.00	0.00	0.04	0.01	0.01	0.01	0.00	0.03	-0.39

[a] Denominator is the number of support interactions for each couple.
[b] Denominator is the number of couple together clips for each couple.

Study 1 Table 12. ***Sex Differences in Proportions of Support Variables at the Level of Couple Support Interactions***

	Husband					Wife					
Husband and Wife Support-Type Proportion Variables	**Mean**	**SD**	**Med**	**Min**	**Max**	**Mean**	**SD**	**Med**	**Min**	**Max**	**paired samples *t*-test df=29**
Received Instrumental [a]	0.31	0.18	0.28	0.06	0.67	0.52	0.21	0.51	0.20	0.86	-3.30**
Solicited Instrumental [a]	0.14	0.13	0.13	0.00	0.50	0.36	0.22	0.34	0.00	0.78	-3.94***
Offered Instrumental [a]	0.15	0.12	0.14	0.00	0.43	0.16	0.13	0.18	0.00	0.50	-0.49
Received Instrumental [b]	0.79	0.24	0.84	0.17	1.00	0.90	0.18	1.00	0.44	1.00	-2.14*
Solicited Instrumental [c]	0.72	0.31	0.93	0.00	1.00	0.87	0.20	1.00	0.50	1.00	-1.96†
Offered Instrumental [d]	0.96	0.14	1.00	0.33	1.00	0.90	0.21	1.00	0.33	1.00	1.81†

[a] Denominator is the number of support interactions for each couple.
[b] Denominator is the number of Received Support interactions by husbands (for husband proportions) and by wives (for wife proportions).
[c] Denominator is the number of Solicited Support interactions by husbands (for husband proportions) and by wives (for wife proportions).
[d] Denominator is the number of Offered Support interactions by husbands (for husband proportions) and by wives (for wife proportions).

Study 1 Table 13. ***Proportions of Support Variables at the Level of Couple Clips***

	Couple Together Proportion Variables (based on no. of couple clips p/couple)				
Support Variable	**Mean**	**SD**	**Med**	**Min**	**Max**
Continuation	0.00	0.01	0.00	0.00	0.02
Instigated by Child	0.00	0.00	0.00	0.00	0.01
Support Receiver					
Husband Receiver	0.02	0.01	0.01	0.00	0.06
Wife Receiver	0.03	0.02	0.02	0.00	0.07
Support Initiation					
Solicited	0.03	0.02	0.03	0.00	0.05
Acknowledged	0.00	0.00	0.00	0.00	0.00
Offered	0.01	0.01	0.01	0.00	0.06
Support Type					
Instrumental	0.04	0.03	0.03	0.00	0.10
Emotional	0.01	0.01	0.00	0.00	0.02
Both	0.00	0.00	0.00	0.00	0.00
Anchor Quality					
Positive	0.04	0.03	0.04	0.01	0.14
Negative	0.00	0.00	0.00	0.00	0.01
Mixed	0.00	0.01	0.00	0.00	0.02
Context					
Found	0.04	0.02	0.03	0.01	0.09
Not observed	0.00	0.00	0.00	0.00	0.02
No opportunity	0.00	0.00	0.00	0.00	0.00
Technical Difficulties	0.00	0.00	0.00	0.00	0.01
Context Quality					
Positive	0.03[a]	0.02	0.03	0.00	0.08
Negative	0.00[a]	0.00	0.00	0.00	0.01
Mixed	0.00[a]	0.01	0.00	0.00	0.02

[a]Denotes proportions calculated with a denominator reflecting the number of interactions when the context was found for each couple.

Study 1 Table 14. ***Partial Correlations Among Proportions of Support Variables Controlling for Each Couple's Overall Supportiveness at the Level of Couple Clips***

Couple Together Proportion Variables	1.	2.	3.	4.	5.	6.
1. Prop of Husband-Receiver	-					
2. Prop of Continuation	-.11	-				
3. Prop of Solicited	-.58***	.06	-			
4. Prop of Instrumental	.12	-.39*	-.39*	-		
5. Prop of Anchor Positive	-.04	.21	.12	-.09	-	
6. Prop of Context Positive	-.31†	-.28	.12	.38*	-.01	-

* p < .05 ** p < .01 *** p < .001 † p < .10

Study 1 Table 15. ***Correlations Among Proportions of Support Variables at the Level of Couple Clips***

Husband/Wife Support-Initiation Proportion Variables	**Prop Husband Solicited**	**Prop Husband Offered**	**Prop Wife Solicited**	**Prop Wife Offered**
1. Prop Husband Solicited	-			
2. Prop Husband Offered	.50**	-		
3. Prop Wife Solicited	-.19	.25	-	
4. Prop Wife Offered	.41*	.38*	.11	-

* p < .05 ** p < .01 *** p < .001 † p < .10

Study 1 Table 16. ***Raw Data for Capitalization Based on Clips at the Level of Individual Behaviors (N = 12 out of 10,030 clips)***

Family ID	Instigated by Child	Continuation	Roles	Initiation	Context/Response Found	Response Quality[a]
01	No	Yes	Husband-receiver	Disclosure by husband	Yes	Pass-Construct
01	No	Yes	Husband-receiver	Disclosure by husband	Yes	Act-Construct
01	No	No	Husband-receiver	Disclosure by husband	Yes	Act-Construct
08	No	Yes	Husband-receiver	Disclosure by husband	Yes	Act-Construct
08	No	Yes	Husband-receiver	Disclosure by husband	Yes	Act-Construct
15	No	No	Husband-receiver	Disclosure by husband	Yes	Pass-Destruct
16	No	No	Husband-receiver	Inquiry by wife	Yes	Act-Construct
29	No	No	Husband-receiver	Disclosure by husband	Yes	Pass-Destruct
29	No	No	Husband-receiver	Disclosure by husband	Yes	Act-Construct
30	No	Yes	Husband-receiver	Disclosure by husband	Yes	Act-Destruct
30	No	Yes	Husband-receiver	Disclosure by husband	Yes	Pass-Constrct
30	No	No	Husband-receiver	Disclosure by husband	Yes	Pass-Destruct

[a] Response Quality: Active-Constructive, Passive-Constructive, Active-Destructive, Passive-Destructive

Study 2 Table 1. ***Multilevel Models (APIMs) Predicting Marital Satisfaction from Observed Marital Support Behavior***

	Coefficient	Standard Error	T-ratio
Received Support Predictors			
Husband Slope (B1)			
Intercept (G10)	115.14	3.50	32.93***
Husband Received / Wife Provided (G11)	-279.98	251.59	-1.11
Wife Received / Husband Provided (G12)	-190.24	189.83	-1.00
Wife Slope (B1)			
Intercept (G20)	108.25	4.40	24.59***
Husband Received / Wife Provided (G21)	-247.47	281.70	-0.88
Wife Received / Husband Provided (G22)	-37.05	188.43	-0.20
Offered Support Predictors			
Husband Slope (B1)			
Intercept (G10)	115.14	3.53	32.59***
Husband Offered (G11)	473.41	501.89	0.94
Wife Offered (G12)	-652.69	585.68	-1.11
Wife Slope (B1)			
Intercept (G20)	108.26	4.40	24.62***
Husband Offered (G21)	291.79	459.67	0.64
Wife Offered (G22)	-376.81	630.55	-0.60
Solicited Support Predictors			
Husband Slope (B1)			
Intercept (G10)	115.14	3.36	34.23***
Husband Solicited (G11)	-569.06	386.22	-1.47
Wife Solicited (G12)	-453.42	216.12	-2.10*
Wife Slope (B1)			
Intercept (G20)	108.27	4.39	24.65***
Husband Solicited (G21)	-454.36	438.19	-1.04
Wife Solicited (G22)	-180.23	245.82	-0.73

Df = 27

Study 2 Table 2. ***Multilevel Models (APIMs) Predicting Diurnal Cortisol Slope from Observed Marital Support Behavior***

	Coefficient	Standard Error	T-ratio
Received Support Predictors			
Husband Slope (B1)			
Intercept (G10)	-0.86	0.07	-12.13***
Husband Received / Wife Provided (G11)	-4.21	5.90	-0.71
Wife Received / Husband Provided (G12)	-2.52	3.81	-0.66
Wife Slope (B1)			
Intercept (G20)	-0.87	0.10	-8.95***
Husband Received / Wife Provided (G21)	5.09	6.52	0.78
Wife Received / Husband Provided (G22)	-2.51	5.64	-0.45
Offered Support Predictors			
Husband Slope (B1)			
Intercept (G10)	-0.87	0.07	-12.51***
Husband Offered (G11)	10.91	6.65	1.64
Wife Offered (G12)	-15.24	8.08	-1.89
Wife Slope (B1)			
Intercept (G20)	-0.87	0.10	-8.80***
Husband Offered (G21)	6.12	9.52	0.64
Wife Offered (G22)	2.84	12.00	0.24
Solicited Support Predictors			
Husband Slope (B1)			
Intercept (G10)	-0.86	0.07	-12.61***
Husband Solicited (G11)	-7.37	7.03	-1.05
Wife Solicited (G12)	-7.42	4.39	-1.69†
Wife Slope (B1)			
Intercept (G20)	-0.87	0.10	-8.95***
Husband Solicited (G21)	5.97	8.53	0.70
Wife Solicited (G22)	-4.07	7.66	-0.53

Df = 21

Study 2 Table 3. ***Multilevel Models (APIMs) Predicting Observed Marital Support Behavior from Depressive Symptoms***

	Coefficient	Standard Error	T-ratio
Received Support Outcome			
Husband Slope (B1)			
Intercept (G10)	0.016099	0.002477	6.499***
Husband Depressive Symptoms (G11)	0.000223	0.000395	0.563
Wife Depressive Symptoms (G12)	0.000147	0.000481	0.306
Wife Slope (B1)			
Intercept (G20)	0.025749	0.002517	10.229***
Husband Depressive Symptoms (G21)	-0.000254	0.000333	-0.762
Wife Depressive Symptoms (G22)	0.001875	0.000361	5.188***
Offered Support Outcome			
Husband Slope (B1)			
Intercept (G10)	0.006976	0.001158	6.025***
Husband Depressive Symptoms (G11)	-0.000320	0.000088	-3.615***
Wife Depressive Symptoms (G12)	0.000609	0.000208	2.927**
Wife Slope (B1)			
Intercept (G20)	0.007586	0.001381	5.494***
Husband Depressive Symptoms (G21)	0.000037	0.000213	0.173
Wife Depressive Symptoms (G22)	0.000078	0.000232	0.335
Solicited Support Outcome			
Husband Slope (B1)			
Intercept (G10)	0.008443	0.001580	5.343***
Husband Depressive Symptoms (G11)	0.000187	0.000307	0.608
Wife Depressive Symptoms (G12)	0.000066	0.000299	0.212
Wife Slope (B1)			
Intercept (G20)	0.018521	0.002273	8.147***
Husband Depressive Symptoms (G21)	0.000067	0.000299	0.225
Wife Depressive Symptoms (G22)	0.001258	0.000390	3.223**

Df = 27

Study 2 Table 4. ***Multilevel Models (APIMs) Predicting Observed Marital Support Behavior from Trait Neuroticism***

	Coefficient	Standard Error	T-ratio
Received Support Outcome			
Husband Slope (B1)			
Intercept (G10)	0.016099	0.002128	7.567***
Husband Neuroticism (G11)	0.000919	0.000405	2.271*
Wife Neuroticism (G12)	0.000951	0.000572	1.663
Wife Slope (B1)			
Intercept (G20)	0.025749	0.003291	7.823***
Husband Neuroticism (G21)	0.000617	0.000509	1.212
Wife Neuroticism (G22)	-0.000184	0.000621	-0.297
Offered Support Outcome			
Husband Slope (B1)			
Intercept (G10)	0.006976	0.001393	5.008***
Husband Neuroticism (G11)	0.000162	0.000256	0.633
Wife Neuroticism (G12)	0.000066	0.000274	0.241
Wife Slope (B1)			
Intercept (G20)	0.007586	0.001289	5.887***
Husband Neuroticism (G21)	0.000308	0.000154	2.003†
Wife Neuroticism (G22)	0.000480	0.000307	1.565
Solicited Support Outcome			
Husband Slope (B1)			
Intercept (G10)	0.008443	0.001370	6.164***
Husband Neuroticism (G11)	0.000603	0.000285	2.120*
Wife Neuroticism (G12)	0.000477	0.000339	1.407
Wife Slope (B1)			
Intercept (G20)	0.018521	0.002660	6.962***
Husband Neuroticism (G21)	0.000459	0.000401	1.145
Wife Neuroticism (G22)	-0.000259	0.000556	-0.466

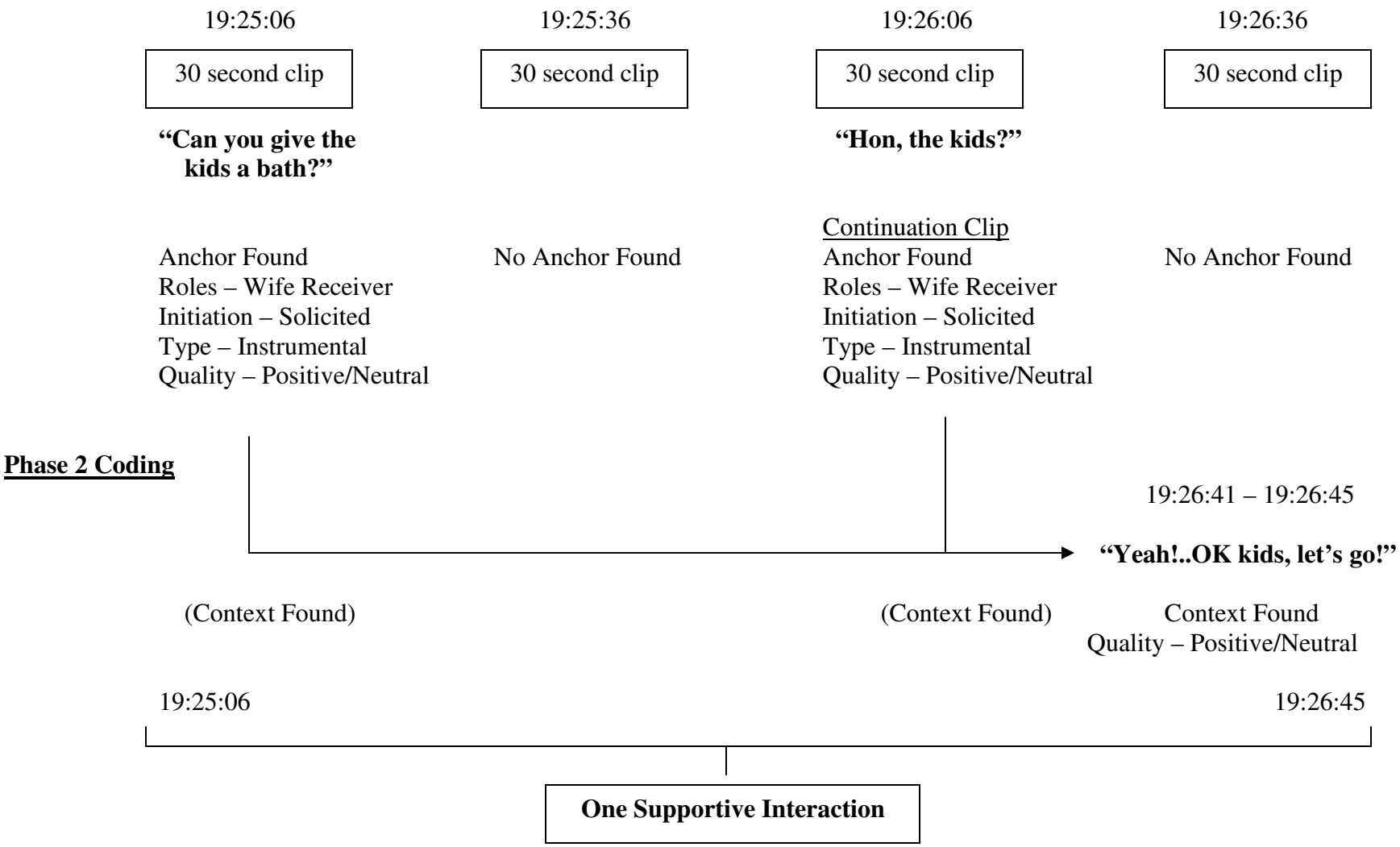
Df = 27

Study 2 Table 5. ***Multilevel Models (APIMs) Predicting Observed Marital Support Behavior from Job Stress***

	Coefficient	Standard Error	T-ratio
Received Support Outcome			
Husband Slope (B1)			
Intercept (G10)	0.016520	0.002599	6.357***
Husband Job Stress (G11)	0.007752	0.010877	0.713
Wife Job Stress (G12)	0.006381	0.006178	1.033
Wife Slope (B1)			
Intercept (G20)	0.025789	0.002937	8.781***
Husband Job Stress (G21)	0.010956	0.011061	0.991
Wife Job Stress (G22)	0.028520	0.005870	4.858***
Offered Support Outcome			
Husband Slope (B1)			
Intercept (G10)	0.007227	0.001323	5.463***
Husband Job Stress (G11)	0.000158	0.005583	0.028
Wife Job Stress (G12)	0.011312	0.003983	2.840**
Wife Slope (B1)			
Intercept (G20)	0.007572	0.001456	5.201***
Husband Job Stress (G21)	0.002686	0.005600	0.480
Wife Job Stress (G22)	0.004073	0.003679	1.107
Solicited Support Outcome			
Husband Slope (B1)			
Intercept (G10)	0.008874	0.001656	5.357***
Husband Job Stress (G11)	0.004483	0.008120	0.552
Wife Job Stress (G12)	0.002399	0.004772	0.503
Wife Slope (B1)			
Intercept (G20)	0.018291	0.002465	7.421***
Husband Job Stress (G21)	0.009922	0.010161	0.976
Wife Job Stress (G22)	0.017695	0.004378	4.042***

Df = 25

Figure 1.


Phase 1 Coding
19:25:06
19:25:36
19:26:06
19:26:36
30 second clip
30 second clip
30 second clip
30 second clip
"Can you give the kids a bath?"
"Hon, the kids?"
Continuation Clip
Anchor Found
Roles – Wife Receiver
Initiation – Solicited
Type – Instrumental
Quality – Positive/Neutral
No Anchor Found
Anchor Found
Roles – Wife Receiver
Initiation – Solicited
Type – Instrumental
Quality – Positive/Neutral
No Anchor Found
Phase 2 Coding
19:26:41 – 19:26:45
"Yeah!..OK kids, let's go!"
(Context Found)
(Context Found)
Context Found
Quality – Positive/Neutral
19:25:06
19:26:45
One Supportive Interaction

APPENDIX A

MARITAL SUPPORT STUDY
Video Coding Manual, v.10

Shu-wen Wang, M.A.
Dissertation Project
UCLA Center on Everyday Lives of Families

Aim of Study: To examine *observable* and *immediate* support exchanges (both social support and capitalization) in everyday marital interactions.

Definition of Social Support:

> "Social support is conceptualized most generally as *responsiveness* to another's needs and more specifically as acts that *communicate caring*; that *validate* the other's words, feelings or actions; or that facilitate adaptive coping with problems through the provision of *information, assistance, or tangible resources.*" (Cutrona, 1996; p. 10)

Definition of Capitalization:

> Capitalization is defined as the *social sharing of good news*; informing another person about the occurrence of a personal positive event and thereby deriving additional benefit from it. (Langston, 1994)

Confidentiality Note:

It is of utmost importance to maintain *confidentiality* and a sense of *anonymity* when working with these naturalistic data that utilize human subjects. If you recognize any family members, please consult with Shu-wen before continuing. Families are not to be discussed outside of the privacy of our research setting.

Research Labs

There are two locations to code in – each one is a PRIVATE space that must remain LOCKED.

- The Repetti CELF Lab is in A337C Franz Hall and you will need a key.
- The CELF Digital Lab is in 320 Haines Hall and you will need a doorcode.

Administrative Instructions

Logging on to the server

- Click "CELF" (not "Paul Connor"); Password:
  Click "CELF" (not "Paul Connor"); Password:
  Click "You"; Password:
- Click "Go" on file bar on top of desktop→ "Connect to server"
- Select the server (there only is one option)
- Type in your personal logon (your name) and password when prompted
- Select the "CELF Archive" server

Locating our team folder – coding manual, coding assignments, coding data files

- Click on "Active Projects/Active Collaborations" folder
- Click on "Shu-wen Wang – Current Project" folder
- Click on "Shu-wen Marital Support Study" folder

Locating Video Clips

- Click on "Raw Data" folder
- Click on "Storage"
- Open the folder for your family
- Select your video file and locate exact clip by adjusting the file time

Locating Transcripts – to assist with understanding audio in video clips

- Click on "CELF Transcripts and Activity Logs"
- Click on "Transcripts" and then "Final Transcripts"
- Open the folder for your family
- Select the corresponding transcript for the video file you are looking at

Locating Family Portraits – to assist with identifying family members (A, B, C, D)

- Click on "CELF Participant Information" folder
- Click on "Family Portraits"
- Open the folder for your family to view photos identifying each family member

VIDEO CODING GUIDELINES

Phase 1 – Anchors

For the purposes of identifying an anchor, follow these guidelines:

- We code VPRISM queries that are between 10-30 seconds long.
- For VPRISM queries longer than 30 seconds, slice them into 30 second clips.
    - If the remainder of the query is between 10-30 seconds long, then that will become a second clip to code.
    - If the remainder of the query is 9 seconds long or less, then we do not consider it a clip to code.

Steps:

- Click on "Marital Support Study - Coding Assignments" to see which family you are assigned to code.

- Click on "Marital Support Study – Sliced Clips for Each Family" and go to your family's worksheet tab to see all clips for your family.

- Paste the following information into your own coding data file from the sliced clips file: clip number, File/Tape, start time, and end-time

Phase 2 – Context

For the purposes of understanding the context of an anchor, we no longer use the 30 second clips, but look at the **10 minutes** before or after the anchor (depending on the type of anchor – solicited, acknowledged, offered – and whether we are looking for a precipitant or response). Thus, context coding uses new start times and end times depending on where the context is located.

General Coding Rules:

- There is no "target" individual; rather, we are coding dyadic interactions where the unit of analysis is the **couple** and the members of the couple can play different roles.

- All support exchanges require the potential participation of both actors in a couple – a **Provider** of support and a **Recipient** of support. Thus, this does not include instances where an individual merely talks about wanting/expecting to provide or receive support, but the partner is not available to be part of an exchange. Both actors must be present in the clip!

- Include both **verbal** (e.g., questions, statements, grunts) and **nonverbal** (gestures, a nudge, a "look") behavior that may be involved in a support exchange

SOCIAL SUPPORT CODING
Phase 1 - Anchors

1. Descriptive Information

- **Clip number, File/tape, Start Time, End Time** – pulled from the "Sliced Clips" file

- **Who is the Receiver and Provider of support?** -- A is always used for Father, and B is always used for Mother (disregard the Family Portraits if they have the reverse).

- **Is this a "continuation" clip?** Does this clip show anchor behavior that is essentially a continuation from a previous clip as part of one over-arching interaction? For example, it is possible that B helps A clear the kitchen table and that the interaction gets coded multiple times across clips due to ongoing dialogue that gets coded as multiple anchor events. Be sure to indicate which anchor clip has the original start-point for the supportive interaction. For example, if clips 101, 102, and 103 were all coded as anchor events but all are continuations of the same supportive interaction, you should indicate for clips 102 and 103 that they are continuations of clip 101.

    - Note that just because there are several anchor clips that are all about the same broad activity – for example, completing a project on the computer – it does *not* mean that all these anchor clips make up the same support interaction, and these should *not* all be automatically coded as continuation clips with the same clip start-point. For example, the first few clips may be about providing support to help the pages print correctly, and the next few clips may be about helping format a document (F11). These sets of anchor clips would have different start-points.

    - You may take into account whether or not a length of time has passed to help you determine whether or not there are two separate support interactions (with two sets of clips with two different start-points).

- **What other family members are on-screen?** –
    - Use C, D, and E, as determined by the Family Portraits. C, D, and E are always labels for children (if there are that many children), and should *not* be used to indicate any other people. C is always a child age 7-12.
    - Use F for any other individuals – friends, other family members, neighbors. Do *not* consider CELF researchers to be F's. Just one F is fine for multiple others.

- **Summary and Notes** – This must be completed for all clips, regardless of whether or not an anchor/context is coded. Here, you should provide a short description of what is happening in the clip (examples "A and B discussing C's homework, D watching TV," "B walking through hall, A cleaning", "Family dinner, discussing movies"). Make any brief notes here as needed.

2. Is there evidence for a **SUPPORT ANCHOR EVENT?**

- Support anchor events allow us to identify whether an **opportunity** for support has occurred. Because we are simply coding whether the opportunity for support is present, it is OK if the opportunity essentially "fails" (e.g., A asks for help but B ignores him).

.

- All support has to be **explicit** on one end of the exchange in order for it to be coded. If it is difficult for you to figure out who is the clear Recipient or Provider of support, then it's likely not a support anchor.

- We will be missing "invisible support" – support that is so smoothly provided or built into daily routine that it is not encoded as support by the provider, recipient, or observer (us!). This is OK – remember we are coding for **observable and explicit support**.

- Identify and code only the **first anchor** in a clip, not multiple anchors that occur in the same clip. This is because Phase 1 of coding is concerned with simply identifying clips where the opportunity for support has occurred, so the actual number of these opportunities within the clip is not important. In addition, even if it is clear to you as the coder that one longer interaction spans across multiple clips and subsequent anchors after the first one are just a "continuation" of the original anchor, you should still code the first anchor for each clip.

- A **third party** can be the instigator of a support exchange. For example, one of the children may announce that she needs help with something to both spouses. At this point, it is possible that the spouses' responses may be coded as a support anchor depending on their reaction. For example, A can offer to help C or perhaps B can ask A to help C. Because C's instigation of support means that there is an expectation that *someone* will have to help her, if one spouse ultimately helps C, then the other spouse will have benefited from it (he's "off the hook") and would find it supportive.

- **The support anchor must clearly meet one of the three criteria**. The guidelines and examples are provided to aid you in coding whether there is a support anchor, but you should not blindly follow these as well. Think about how these apply to the situation in context. For example, someone saying 'Thank you" does not *necessarily* mean support has been received, depending on the situation.

    - Explicitly **solicited or invited** by Recipient (any verbal or nonverbal behavior that may warrant support provision from the partner) or where the Recipient provides an opening for support to occur.

        Recipient may directly ask:
        Ex) Commands or orders
        Ex) "Can you wash the dishes?"
        Ex) "What should I do with this bill?"

        Recipient may "put information out there" that reasonably draws for support:
        Ex) "I've had a rough day – work was crazy."
        Ex) "Look at this email. That is so typical of him."

        The following nonverbals may be involved:
        Ex) Pointing or gesturing towards a task
        Ex) Exasperated looks and sighs that may signal need for support

    - Explicitly **acknowledged** by Recipient (any verbal or nonverbal behavior that recognizes that support was provided)

        Ex) "Thanks"
        Ex) "That really helps."
        Ex) Appreciative head-nod, smiles or frowns

    - Explicitly **offered** by Provider (any verbal or nonverbal behavior that indicates that support is being offered)

        Ex) "Do you want me to start dinner?
        Ex) "You look down." "Something wrong?"
        Ex) Waving partner away from a task, "No, no, let me do that."
        Ex) "I'm reminding you to call your mother because I know you'll forget."

        The following nonverbals may be involved:
        Ex) Pat on the back offered in an encouraging, supportive way
        Ex) Sympathetic smile

3. What **TYPE OF SUPPORT** is the anchor?

Instrumental/Informational Support – tangible help with practical problems/tasks such as providing assistance with tasks/chores and providing information to handle a problem

How do we determine if something is truly instrumental support? This can be a particularly difficult distinction to make, since so many little tasks and exchanges occur throughout the day. We have 3 guidelines, and at least 1 of these should be met:

1. Is the task/issue/information substantive, meaningful, or complex? We are referring to substantive activities that take some type of meaningful effort to engage in or would be (reasonably) viewed as supportive or helpful.

   "Please pass the peas" would be too simple of a task to count as instrumental support, if the person were already sitting at the dinner table and it requires no effort to simply pass the bowl.

   "Did you see my glasses?" would be too simple of a question to count as informational support, since it basically requires a simple yes/no answer (or something close to a yes/no answer) and requires no further interaction.

2. Is there back-and-forth interaction regarding the task/issue/information? An extended back-and-forth interaction may (or may not) indicate that something is important enough or required enough effort/involvement to be supportive. Simple yes/no or one-note responses are likely not support.

   A good tip is to think of the ramifications of information that is provided. Does it benefit (aka, support) a clearly-identifiable "recipient"? If not, then it is likely just a conversation and not support.

   A good example of informational support that often entails much back-and-forth interaction is the coordination of schedules. Note that it should be clear who is being benefited (i.e., who is the recipient) in such an interaction.

3. Is there an imposition or burden involved? Consider if the support imposes on or burdens the provider in any way. For example, does providing the support entail any inconvenience, an extra step or effort, or detailed thought?

   A good example of imposition or burden is when one spouse asks the other to "remind" them about something (e.g., "Remind me to call XXX later about that meeting.") That spouse is essentially putting a *future burden* on the partner to be responsible for something so that the s/he no longer needs to remember it.

   The same is true when one spouse "hands off" a task/responsibility to the other (e.g., asking spouse to check on something for them).

Emotional Support – support that makes one feel cared for, bolsters self-worth; talking over a problem; providing advice or guidance; providing comfort, empathy, encouragement.

The coding of emotional support may be particularly subtle and difficult in everyday life. It will be rare that we'll find instances of clear and explicit emotional support (e.g., "You look sad, want to talk?")

We have to be particularly attuned to instances where spouses provide opportunities for their partners to be emotionally supportive by "**putting information out there**" and inviting emotional support. Some examples:

- "It's been a long day." [followed by a sigh]
- Venting, complaining about job – the nature of the work or one's boss/coworkers
- Venting, complaining about one's children – a negative interaction, problems with discipline

We also have to be attuned to **subtle offers** of empathy, comfort, and encouragement. Some examples:

- In response to a spouse's complaint about a colleague, the partner may say nothing more than "Yeah," but do so in an empathic, understanding tone.

- In response to a spouse mentioning that it's been a long day and they've brought work to finish up at home, the partner may then order the kids out of the room (to allow the spouse to finish their work). (F10)

Giving a **massage** to one's spouse would be considered an instance of emotional support and not instrumental support. By giving a massage, the spouse is making their partner feel cared for, and may be providing comfort, empathy, and encouragement. [see Fam13 example of massage]

4. What is the **QUALITY** of the anchor?

Support does not need to be provided and/or received in a positive way in order for a support anchor to be coded. Therefore, code the **quality of the support anchor** using clues from the words used, tone (if verbal), facial expressions, and body language.

1. Positive or neutral

    - Support is respectfully solicited, acknowledged, or offered in a pleasant/agreeable/positive manner.

    - Support is respectfully solicited, acknowledged, or offered in a neutral, task-oriented manner.

2. Negative

    - Support is disrespectfully solicited, acknowledged, or offered in a negative manner. This may include blaming, complaining, hostility or rejecting, commanding or ordering, or criticism and put-downs.

3. Mixed or ambiguous

    - There may be mixed or ambiguous support anchors where both positive/neutral and negative elements seem apparent. For example, it may be difficult to understand *sarcasm* as it may be biting and negative, or joking and light-hearted. Additionally, some commands that are not clearly negative would also be considered mixed or ambiguous.

    - A good rule of thumb is if an anchor is not clearly positive/neutral or negative, then it should be coded mixed/ambiguous. When in doubt, it should be coded mixed/ambiguous!

SOCIAL SUPPORT CODING
Phase 2 - Context

***Reminder, all context segments require a brief qualitative description of what is happening on-screen. Describe the activities of all family members, with a focus on the couple. It is OK if the description is a repeat of your description for the anchor clip, which will happen if the context for the anchor is coded in the same clip.

1. Is there evidence for the **CONTEXT** of an anchor event?

Now that a support anchor has been identified, we are interested in understanding the **context** in which that support anchor emerged – either what happened to trigger the support anchor (***precipitant***), or what happened subsequent to the support anchor (***response***).

- **The 10 Minute Rule** – You will search in the 10 minutes prior to an anchor event for a precipitant, and 10 minutes after an anchor event for the response.

  If you identified solicitation of support by the Recipient, you should now look for the response by the Provider.

  If you identified acknowledgement of support by the Recipient, you should now look for the precipitant by the Provider.

  If you identified offer of support by the Provider, you should now look for the response by the Recipient.

- Context coding uses ***new*** **start times and end times** depending on where the context is located. Disregard the 30 second clip structure that was used for anchor event coding.

- Note that by "response," we are referring to the ***immediate reaction*** of the Provider (for solicitations), and this may or may not include our observation of the support actually taking place. For example, if the wife asks the husband to help their daughter with her homework, and the husband responds "OK, sure" and we don't see the actual homework activity/help take place, we would code the "OK, sure" as the response (and this is a very typical scenario). However, if the husband does not say anything in response to the wife's request but walks over to help the daughter with her homework, then we would code this action as the response.

- A "no response" (**0=Not found**) should only be coded if the Recipient solicits help and the Provider does not respond at all – either because they did not hear the solicitation or because they heard the solicitation and have yet to act on it.

- If it is clear that the Provider is ***actively ignoring*** the Recipient's request, then this should not be considered "no response," but the response would be considered A) Found, and B) Negative in quality.

    *An example of an ***active ignore*** would be when there are behaviors to suggest that the Provider has observed the solicitation but is refusing to acknowledge it. You can also take into consideration how likely it is for the Provider to not have heard the Recipient (a "no response") versus how likely it is that the Provider heard the Recipient but is not responding (an "active ignore"). For example, if the Provider is standing right next to the Recipient when asking for help, and there is either no or limited background noise, and the Provider then starts humming to himself after the Recipient speaks, then you are justified in considering this an "active ignore" and coding it as a context that is A) Found, and B) Negative in quality.

Context Found Codes

0 = Not found – The context is simply not observed.

1 = Found – The precipitant or response is observed (for the spouse).

2 = No opportunity due to Recipient – There is no opportunity for the Provider to provide support because the Recipient completes the supportive action within the next 10 min (e.g., After asking A to wash the dishes, B goes ahead and does it herself). This only applies for solicitations/requests for support.

3 = No opportunity due to Other – There is no opportunity for the Provider to provide support because another person completes the supportive action within the next 10 min (e.g., After B asks A to wash the dishes, grandfather F does it instead). This only applies for solicitations/requests for support.

4 = Unclear context due to technical difficulty or low talking. This code should be used in instances where there is a clear anchor (e.g., "Would you take her?"), but the response is unclear due to an audiovisual problem or to low talking or mumbling by the spouse. To get this code, it should be impossible to determine whether the spouse responded, for example, if they said something after a solicitation was made but we can't tell if what they said was in response to the solicitation or about something else. No further context coding is required (e.g., Others Onscreen, Context Quality). This "Unclear Context" code differs from "Not Found" since "Not Found" is given in instances when it is clear that the context did not occur in the 10 minutes.

2. What is the **QUALITY** of the context?

Code the **quality of the precipitant or response** using clues from the words used, tone (if verbal), facial expressions, and body language.

1. Positive or neutral

    - The precipitant or response is pleasant/agreeable/positive.

    - The precipitant or response is respectful and/or neutral and task-oriented.

2. Negative

    - The precipitant or response is disrespectful and negative in nature. This may include blaming, complaining, hostility or rejecting, commanding, or criticism and put-downs.

3. Mixed or ambiguous

    - There may be mixed or ambiguous precipitants and responses where both positive/neutral and negative elements seem apparent. For example, it may be difficult to understand *sarcasm* as it may be biting and negative, or joking and light-hearted. Additionally, some commands that are not clearly negative would also be considered mixed or ambiguous.

    - A good rule of thumb is if the precipitant or response is not clearly positive/neutral or negative, then it should be coded mixed/ambiguous.

CAPITALIZATION CODING
Phase 1 - Anchors

We are also studying capitalization exchanges in couples. This is a much simpler coding process than the support coding, but will follow many of the same principles.

A few notes about capitalization:

- Capitalization is about the sharing of fortunate or positive events. Just as for support, these events should be *meaningful*. Sharing that someone complimented you on your outfit would not be considered capitalization.

- The fortunate or positive event should be specific to the individual (and not an event that would more generally be thought of as specific to the couple). For example, someone announcing they got a raise would count as capitalization since the raise was specifically given/earned by the individual (although it benefits the spouse as well). However, someone announcing that the bank called and the home loan came through would not count as capitalization since it is an event that primarily benefits the couple rather than being specific to an individual.

Coding Steps

The same descriptive information from the social support coding is needed here.

Capitalization anchors should fulfill one of the following 2 criteria:

- Recipient discloses fortunate/positive event.
    - Ex) "At my review today, my boss complimented me on my management of the group project."
    - Ex) "We're going to make two trailers, one for his movie and one for mine…but he really liked my movie pitch a lot. [Fam 01]
    - Ex) Father announces he will get a raise [Fam 01]
    - Ex) "I'm really glad we got the camera and the press out" [for A's new printing company, Fam 30].
    - Ex) "Well you know the software that- that has enabled people to order online?..The machine now does everything ten times faster…So we literally can go from forty to a hundred a month." [for A's new printing company, Fam 30]

  Provider inquires specifically about a fortunate/positive event.
    - Ex) "Weren't you supposed to have that review today?"

* A general open question ("How was your day?") that then prompts the disclosure of a fortunate/positive event would not count as an inquiry.

* Asking about something that does not turn out to be a positive/fortunate event (even though the Provider seems to think that they are asking about a positive/fortunate event) would clearly not be capitalization, since by definition, capitalization is about positive/fortunate events. However, this may pave the way for a Social Support anchor (and in particular, emotional support).

CAPITALIZATION CODING
Phase 2 - Context

Once you've identified a capitalization anchor, you should search for the **context** of the anchor:

- If you identified disclosure by the Recipient, you should now look for the response by the Provider. The response should be coded as one of the following:

  - Active- Constructive – enthusiastically supportive

    Consider the *strength* of the response – is the response enthusiastic, exuberant, energetic support? Does the Provider seem *truly pleased* for the Recipient?

    This can be both verbal (e.g., "Wow, congrats!) and nonverbal (e.g., big hug, encouraging nods or big smiles)

    Ex) "Wow, that's so great!" with big smile [wife's response to husband's announcement that he will get pay raise, Fam01]

  - Passive-Constructive – coolly supportive

    Consider the *strength* of the response – is the response understated, restrained, cool support? Does the Provider seem as though he's obligated to give some type of acknowledgement of the event, but is not truly that pleased?

    This can be both verbal (e.g., a monotone "good") or nonverbal (e.g., slight nod or slight smile)

    Ex) A describes new website for his personal company, B says a soft "Cool" in a neutral and unexcited way, and A then emphasizes "*Very* cool….*very* cool." (F30)

  - Active-Destructive – finding problem or downsides

    The Provider's first strong meaningful response is to find problems or downsides with the positive event.

    If the Provider provides an Active-Constructive response initially, only after which they start asking questions about possible downsides, then the response should be coded as Active-Constructive since this was the first strong response.

If the Provider provides a Passive-Constructive response initially (e.g., neutral "good") and then starts finding problems or downsides, then the response should be coded Active-Destructive since this was the first strong response.

Ex) A states "I'm really glad we got the camera and the press out, that was major marketing to get the line out." B immediately responds "Is he going to take that out on commission too?" (F30)

- Passive-Destructive – disinterested, ignoring

  The Provider may show disinterest in the Recipient's positive event by giving a *neutral response* that does not acknowledge the event in a supportive way (e.g., saying "OK" or "uh-huh").

  The Provider may show disinterest in the Recipient's positive event by *actively ignoring* the positive event (e.g., providing no response, changing the subject). It should be clear – similar to our rules on p. 11 for social support response contexts – that the Recipient reasonably heard the positive event in order for this code to be coded.

  Ex) For excellent example, please see Fam 30, B22, 0:08:09 – 0:09:46. A describes new machine for his personal company that will speed up transactions and bring in more business. B repeatedly makes comments about her clothes throughout his description and occasionally says "uh-huh". At one point, A asks B "Did you hear that?" to ensure that she is paying attention to him, to which B responds "Yeah" but does not provide any positive supportive responses.

- If you identified <u>inquiry</u> by the Provider, we are now interested in the sequence of responses that follow.

  - The Recipient may have a <u>positive/neutral</u> response (this will likely be the most common response when a fortunate/positive event happens). We are now interested in how the Provider then responds to the Recipient's positive/neutral response.

    - Active- Constructive – enthusiastically supportive
    - Passive-Constructive – silently supportive
    - Active-Destructive – finding problem or downsides
    - Passive-Destructive – disinterested

Ex) Provider: "How was your review?"
Recipient: "It went really well, I'm getting a raise."
Provider: "That's great, you've worked really hard."

Here, we are coding the Provider's "That's great…" response as Active-Constructive.

- The Recipient may have a negative response (e.g., raining on their own parade), which means this is no longer a capitalization event, but may become a social support event.

Ex) Provider: "How was your review?"
Recipient: "It went well, but they're giving me more responsibilities now – I'll have longer hours, more work!"
Provider: "Oh, that's a shame, you work so hard already."

Here, this becomes an example of emotional social support.

APPENDIX B

Supplementary Tables

Table B1. ***Pilot Data from Both Pilot Families (Family 10 and Family 11)***

Codes	Family 10	Family 11		Total from both families
Number of Couple Clips	**183**	**184**		**367**
Number of Support Interactions	**20**	**8**		**28**
Support Initiation				
Solicitations	11	5		16
Offers	9	3		12
Acknowledgements	0	0		0
Support Type				
Instrumental/Informational	18	8		26
Emotional	2	0		2
Anchor/Initiation Quality				
Positive/neutral	17	8		25
Negative	1	0		1
Mixed	2	0		2
Context/Response Quality				
Positive/neutral	15	8		23
Negative	2	0		2
Mixed	2	0		2

Note. Context quality was found for only 27 out of the 28 support interactions; thus, the total number of positive/neutral, negative, and mixed codes for context quality from both couples sum to 27 instead of 28.

Table B2. ***Training Coding Inter-Rater Reliability Scores for 30-Second Couple Together Clips (N = 367 clips; two families)***

Code	Kappa			Percent Agreement		
	Range	Median	Mean	Range	Median	Mean
Support Anchor Found (y/n)	.40 - .89	.66	.65	.90-.98	.93	.94
Support Receiver (wife/husband)	.48 – 1.0 (n/a)	.90	.88	.62 – 1.0	.95	.90
Continuation (y/n)	.67 - .90 (n/a)	.80	.81	.67 - .95	.88	.82
Instigated by Child (y/n)	.46 – 1.0 (n/a)	.87	.77	.57 – 1.0	.93	.89
Initiation (solicited, acknowledged, offered)	.42 - .90 (n/a)	.67	.63	.69 - .94	.83	.81
Type (instrumental, emotional)	.44 – 1.0 (n/a)	1.0	.90	.87 – 1.0	.96	.97
Quality (positive, negative, mixed)	.46 - .66 (n/a)	.47	.54	.52 – 1.0	.90	.84
Context Found (y/n)	.47 – 1.0 (n/a)	.73	.73	.73 – 1.0	.91	.89
Context Quality (positive, negative, mixed)	.69 – 1.0 (n/a)	.90	.80	.69 – 1.0	.88	.85

Note. N/A denotes that this code had instances where kappa could not be computed due to asymmetrical matrices where coders did not use the same set of score responses. The subsequent range, median, and mean are based on the kappas that *did* compute. It should be noted that percent agreement for these cases is a very accurate indicator of reliability because I only considered cases in which an anchor was found.

Table B3. ***Frequencies and Proportions of Anchor Quality and Context Quality Variables Separated by Solicited Support and Offered Support at the Level of Individual Clips***

Support Variable	Frequency	Proportion (out of 10,030 couple clips)	Proportion (out of coded quality clips)[b]
Solicited Support			
Anchor Quality			
Positive	277	0.03	0.92
Negative	5	0.00	0.02
Mixed	18	0.00	0.06
Negative/Mixed[a]	23	0.00	0.08
Context Quality			
Positive	121	0.01	0.96
Negative	1	0.00	0.01
Mixed	4	0.00	0.02
Negative/Mixed[a]	5	0.00	0.04
Offered Support			
Anchor Quality			
Positive	121	0.01	0.96
Negative	1	0.00	0.01
Mixed	4	0.00	0.02
Negative/Mixed[a]	5	0.00	0.04
Context Quality			
Positive	96	0.01	0.88
Negative	3	0.00	0.03
Mixed	10	0.00	0.10
Negative/Mixed[a]	13	0.00	0.12

Note. The few instances of acknowledged support (n = 6) are not included here.

[a] Denotes a combination of the negative and mixed codes reflecting all clips that had some negative element.

[b] Denotes proportions calculated with the denominator reflecting the total number of coded quality clips (e.g., 300 for solicited support anchor quality, 126 for solicited support context quality, 126 for offered support anchor quality, 109 for offered support context quality)

Table B4. ***Frequencies and Proportions of Anchor Quality and Context Quality Variables Separated by Instrumental Support and Emotional Support at the Level of Individual Clips***

Support Variable	Frequency	Proportion (out of 10,030 couple clips)	Proportion (out of coded quality clips)[b]
Instrumental Support			
Anchor Quality			
Positive	304	0.03	0.92
Negative	6	0.00	0.02
Mixed	21	0.00	0.06
Negative/Mixed[a]	27	0.00	0.08
Context Quality			
Positive	263	0.03	0.88
Negative	11	0.00	0.04
Mixed	25	0.00	0.08
Negative/Mixed[a]	36	0.00	0.12
Emotional Support			
Anchor Quality			
Positive	97	0.01	0.99
Negative	0	0.00	0.00
Mixed	1	0.00	0.01
Negative/Mixed[a]	1	0.00	0.01
Context Quality			
Positive	71	0.01	0.83
Negative	9	0.00	0.10
Mixed	6	0.00	0.07
Negative/Mixed[a]	15	0.00	0.17

Note. The 3 clips containing support that were coded as both instrumental and emotional are not presented here.

[a] Denotes a combination of the negative and mixed codes reflecting all clips that had some negative element.

[b] Denotes proportions calculated with the denominator reflecting the total number of coded quality clips (e.g., 331 for instrumental anchor quality, 299 for instrumental support context quality, 98 for emotional support anchor quality, 86 for emotional support context quality)

Table B5. ***Frequencies and Proportions of Anchor Quality and Context Quality Variables Separated by Solicited Support and Offered Support at the Level of Support Interactions***

Support Variable	Frequency	Proportion (out of 356 support interactions)	Proportion (out of coded quality interactions)[d]
Solicited Support			
Anchor Quality			
Positive	229	0.64 [b]	0.94
Negative	2	0.01 [b]	0.01
Mixed	12	0.03 [b]	0.05
Negative/Mixed[a]	14	0.04 [b]	0.06
Context Quality			
Positive	193	0.61 [c]	0.87
Negative	9	0.03 [c]	0.04
Mixed	20	0.06 [c]	0.09
Negative/Mixed[a]	29	0.09 [c]	0.13
Offered Support			
Anchor Quality			
Positive	106	0.30 [b]	0.97
Negative	0	0.00 [b]	0.00
Mixed	3	0.01 [b]	0.03
Negative/Mixed[a]	3	0.01 [b]	0.03
Context Quality			
Positive	80	0.25 [c]	0.86
Negative	3	0.01 [c]	0.03
Mixed	10	0.03 [c]	0.11
Negative/Mixed[a]	13	0.04 [c]	0.14

[a] Denotes a combination of the negative and mixed codes reflecting all interactions that had some negative element.
[b] Denotes proportions calculated with a denominator of 356 support interactions.
[c] Denotes proportions calculated with a denominator of 319 support interactions for which context had been observed and context quality was coded.
[d] Denotes proportions calculated with the denominator reflecting the total number of coded quality clips (e.g., 243 for solicited support anchor quality, 222 for solicited support context quality, 109 for offered support anchor quality, 93 for offered support context quality)

Table B6. ***Frequencies and Proportions of Anchor Quality and Context Quality Variables Separated by Instrumental and Emotional Support at the Level of Support Interactions***

Support Variable	Frequency	Proportion (out of 356 support interactions)	Proportion (out of coded quality interactions)[d]
Instrumental Support			
Anchor Quality			
Positive	273	0.77 [b]	0.94
Negative	2	0.01 [b]	0.01
Mixed	14	0.04 [b]	0.05
Negative/Mixed[a]	16	0.04 [b]	0.06
Context Quality			
Positive	227	0.71 [c]	0.87
Negative	8	0.03 [c]	0.03
Mixed	26	0.08 [c]	0.10
Negative/Mixed[a]	34	0.11 [c]	0.13
Emotional Support			
Anchor Quality			
Positive	63	0.18 [b]	0.98
Negative	0	0.00 [b]	0.00
Mixed	1	0.00 [b]	0.02
Negative/Mixed[a]	1	0.00 [b]	0.02
Context Quality			
Positive	46	0.14 [c]	0.85
Negative	4	0.01 [c]	0.07
Mixed	4	0.01 [c]	0.07
Negative/Mixed[a]	8	0.03 [c]	0.15

[a] Denotes a combination of the negative and mixed codes reflecting all interactions that had some negative element.
[b] Denotes proportions calculated with a denominator of 356 support interactions.
[c] Denotes proportions calculated with a denominator of 319 support interactions for which a context had been found and context quality was coded.
[d] Denotes proportions calculated with the denominator reflecting the total number of coded quality clips (e.g., 289 for instrumental anchor quality, 261 for instrumental support context quality, 64 for emotional support anchor quality, 54 for emotional support context quality)

References

Abercrombie, H. C., Giese-Davis, J., Sephton, S., Epel, E. S., Turner-Cobb, J. M., & Spiegel, D. (2004). Flattened salivary cortisol rhythms in metastatic breast cancer patients. *Psychoneuroendocrinology,* 29, 1082-1092.

Acitelli, L. K., & Antonucci, T. C. (1994). Gender differences in the link between marital support and satisfaction in older couples. *Journal of Personality and Social Psychology, 67,* 688-698.

Ackerman, R. A., Kashy, D. A., Donnellan, M. B., & Conger, R. D. (2011). Positive-engagement behaviors in observed family interactions: A social relations perspective. *Journal of Family Psychology, 25*, 719-739.

Adam, E. K., & Gunnar, M. R. (2001). Relationship functioning and home and work demands predict individual differences in diurnal cortisol patterns in women. *Psychoneuroendocrinology,26*, 189–208.

Barnett, R. C., Brennan, R. T., Raudenbush, S. W., Pleck, J. H., & Marshall, N. L. (1995). Change in job and marital experiences and change in psychological distress: A longitudinal study of dual-earner couples. *Journal of Personality and Social Psychology, 69,* 839-850.

Barnett, R. C. Steptoe, A., & Gareis, K. C. (2005). Marital-role quality and stress-related psychobiological indicators. *Annals of Behavioral Medicine,* 30, 36-43.

Beach, S. R., Martin, J. K., Blum, T. C., & Roman, P. M. (1993). Subclinical depression and role fulfillment in domestic settings: Spurious relationships, imagined problems, or real effects? *Journal of Psychopathology and Behavioral Assessment, 15,* 113-128.

Beach, S. R. H., & Tesser, A. (1995). Self-esteem and the extended self-evaluation maintenance model: The self in social context. In M. H. Kernis (Ed.), *Efficacy, agency, and self-esteem* (pp. 145-170). New York: Plenum.

Belcher, A. J., Laurenceau, J.-P., Graber, E. C., Cohen, L. H., Dasch, K. B., Siegel, S. D. (2011). Daily support in couples coping with early stage breast cancer : Maintaining intimacy during adversity. *Health Psychology, 30*, 665-673.

Belle, D. (1982). The stress of caring: Women as providers of social support. In L. Goldberger and S. Brenitz (Eds.,) *Handbook of Stress: Theoretical and clinical aspects (pp. 496-505).* New York: Free Press.

Bhattacharyya, M. R., Molloy, G. J., & Steptoe, A. (2008). Depression is associated with flatter cortisol rhythms in patients with coronary artery disease. *Journal of Psychosomatic Research, 65,* 107-113.

Bolger, N., DeLongis, A., Kessler, R. C., & Wethington, E. (1989). The contagion of stress across multiple roles. *Journal of Marriage and Family, 51,* 175-183.

Bolger, N., & Schilling, E. A. (1991). Personality and the problems of everyday life: The role of neuroticism in exposure and reactivity to daily stressors. *Journal of Personality*, *59*, 355-386.

Bolger, N., & Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology, 69*, 890–902.

Bolger, N., Zuckerman, A., & Kessler, R. (2000). Invisible support and adjustment to stress. *Journal of Personality and Social Psychology, 79(6),* 953-961.

Bradbury, T.N. & Pasch, L. (1994) *The Social Support Interaction Coding System (SSICS).* Unpublished coding manual, University of California, Los Angeles.

Brock, R. L., & Lawrence, E. (2008). A longitudinal investigation of stress spillover in marriage: Does spousal support adequacy buffer the effects? *Journal of Family Psychology, 22*, 11-20.

Brock, R. L., & Lawrence, E. (2009). Too much of a good thing: Underprovision versus overprovision of partner support. *Journal of Family Psychology, 23*,181-192.

Burleson, B. R., & Kunkel, A. W. (2006). Revisiting the different cultures thesis: An assessment of sex differences and similarities in supportive communication. In K. Dindia & D. J. Canary (Eds.), *Sex differences and similarities in communication* (2nd ed., pp. 137–159). Mahwah, NJ: Erlbaum.

Caughlin, J. P., Huston, T. L., & Houts, R. M. (2000). How does personality matter in marriage: An examination of trait anxiety, interpersonal negativity, and marital satisfaction. *Journal of Personality and Social Psychology, 78,* 326-336.

Cohen, S. (2004). Social relationships and health. *American Psychologist, 59,* 676-684.

Cohen, S., Gottlieb, B., & Underwood, L. (2000). Social relationships and health. In S. Cohen, L. Underwood, & B. Gottlieb (Eds.), *Measuring and intervening in social support (pp. 3-25).* New York: Oxford University Press.

Conger, R. D., Rueter, M. A., & Elder, G. H. (1999). Couple resilience to economic pressure. *Journal of Personality and Social Psychology, 76,* 54-71.

Connor-Smith, J. K. & Flachsbart, C. (2007). Relationships between personality and coping: A meta-analysis. *Journal of Personality and Social Psychology, 93*, 1080-1107.

Costa, P. X, Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI- R) and NEO Five-Factor Inventory (NEO-FFI) professional manual.* Odessa, FL:

Psychological Assessment Resources.

Coyne, J. C. (1976). Toward an interactional description of depression. *Psychiatry, 39*, 28–40.

Coyne, J. C., & DeLongis, A. (1986). Going beyond social support: The role of social relationships in adaptation. *Journal of Consulting and Clinical Psychology, 54,*454-460.

Cross, S. E., & Madson, L. (1997). Models of the self: Self-construals and gender. *Psychological Bulletin, 122,* 5-37.

Cutrona, C. E. (1990). Stress and social support: In search of optimal matching. *Journal of Social and Clinical Psychology, 9*, 3-14.

Cutrona, C. E. (1996). *Social support in couples: Marriage as a resource in times of stress.* Thousand Oaks, CA: Sage Publications, Inc.

Cutrona, C. E., Shaffer, P. A., Wesner, K. A., & Gardner, K. A. (2007). Optimally matching support and perceived spousal sensitivity. *Journal of Family Psychology, 21,* 754-758.

Cutrona, C., & Suhr, J. (1994). Social support communication in the context of marriage: An analysis of couples' supportive interactions. In B. R. Burleson, T. L. Albrecht, & I. G. Sarason (Eds.), *Communication of social support: Messages, interactions, relationships, and community (pp. 113-135).* Thousand Oaks, CA: Sage.

Davila, J., Bradbury, T. N., Cohan, C. L., & Tochluk, S. (1997). Marital functioning and depressive symptoms: Evidence for a stress generation model. *Journal of Personality and Social Psychology, 73,* 849–861.

Davila, J., Karney, B. R., Hall, T. W., & Bradbury, T. N. (2003). Depressive symptoms and marital satisfaction: Dynamic associations and the moderating effects of gender and neuroticism. *Journal of Family Psychology, 17,* 557-570.

De Neve, K. M., & Cooper, H. M. (1996). The happy personality: A meta-analysis of 143 personality traits and subjective well-being. *Psychological Bulletin, 124,* 197–229.

Eagly, A. E. (2009). The his and hers of prosocial behavior: An examination of the social psychology of gender. *American Psychologist, 64,* 644-658.

Eckenrode, J., & Wethington, E. (1990). The process and outcome of mobilizing social support. In S. W. Duck & R. C. Silver (Eds.), *Personal relationships and social support* (pp. 83-103). Thousand Oaks, CA: Sage.

Gable, S. L., Gonzaga, G. C., & Strachman, A. (2006). Will you be there for me when things go right? Supportive responses to positive event disclosures. *Journal of Personality and Social Psychology, 91,* 904–917.

Gable, S.L., & Reis, H.T. (2001). Appetitive and aversive social interaction. In J. Harvey and A. Wenzy (Eds.) *Close romantic relationships: Maintenance and enhancement* (pp. 169-194). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Gable, S. L., Reis, H. T., Impett, E. A. & Asher, E. R. (2004). What do you do when things go right? The intrapersonal and interpersonal benefits of sharing positive events. *Journal of Personality and Social Psychology,* 87, 228-245.

Gareis, K. C., & Barnett, R. C. (2003). Individual and crossover effects of work schedule fit: A within-couple analysis. *Journal of Marriage and Family, 65,* 1041-1054.

Gilligan, C. (1982). *In a different voice: Psychological theory and women's development.* Cambridge, Massachusetts: Harvard University Press.

Gleason, M. E. J., Iida, M., Bolger, N., & Shrout, P. E. (2003). Supportive equity in close relationships. *Personality and Social Psychology Bulletin, 29,* 1036-1045.

Gleason, M. E. J., Iida, M., Shrout, P. E., & Bolger, N. (2008). Receiving support as a mixed blessing: Evidence for dual effects of support on psychological outcomes. *Journal of Personality and Social Psychology*, 94, 824-838.

Gottman, J. M. (1979). *Marital interaction: Experimental investigations.* New York: Academic Press.

Gottman, J.M., (1980). The consistency of nonverbal affect and affect reciprocity in marital interaction. *Journal of Consulting and Clinical Psychology, 48*, 711-717.

Gottman, J. M., Coan, J., Carrere, S., & Swanson, C. (1998). Predicting marital happiness and stability from newlywed interactions. *Journal of Marriage & the Family*, *60*, 5-22.

Gottman, J. M., & Driver, J. L. (2005). Dysfunctional marital conflict and everyday marital interaction. *Journal of Divorce and Remarriage, 43,* 63-77.

Gottman, J. M., & Krokoff, L. J. (1989). Marital interaction and satisfaction: A longitudinal view. *Journal of Consulting and Clinical Psychology, 57*(1), 47-52.

Gottman, J. M., & Notarius, C. I. (2000). Decade review: Observing marital interaction. *Journal of Marriage and the Family, 62,* 927–947.

Gunthert, K. C., Cohen, L. H., & Armeli, S. (1999). The role of neuroticism in daily stress and coping. *Journal of Personality and Social Psychology*, *77*, 1087-1100.

Hammen, C. (1991). Generation of stress in the course of unipolar depression. *Journal of Abnormal Psychology, 100,* 555-561.

Hann D., Winter K., & Jacobsen P. (1999) Measurement of depressive symptoms in cancer patients: Evaluation of the Center for Epidemiological Studies Depression Scale (CES-D). *Journal of psychosomatic research, 46*, 437-443.

Heavey, C. L., Christensen, A., & Malamuth, N. M. (1995). The longitudinal impact of demand and withdrawal during marital support. *Journal of Consulting and Clinical Psychology, 63,* 797-801.

House, J., & Kahn, R. (1985). *Measures and concepts of social support.* San Diego, CA: Academic Press.

Iida, M. J., Seidman, G., Shrout, P. A., Fujita, K., & Bolger, N. (2008). Modeling support provision in intimate relationships. *Journal of Personality and Social Psychology 94(3),* 460-478.

Jacob, T., & Johnson, S. L. (1997). Parent–child interaction among depressed fathers and mothers: Impact on child functioning. *Journal of Family Psychology, 11*, 391–409.

Jacobson, N. S., & Margolin, G., (1979). *Marital therapy: Strategies based on social learning and behavior exchange.* New York. Brunner/Mazel Inc.

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). New York, NY: The Guilford Press.

Julien, D., & Markman, H. J. (1991). Social support and social networks as determinants of individual and marital outcomes. *Journal of Social and Personal Relationships, 8,* 549-568.

Kamp Dush, C. M, Taylor, M. G., & Kroeger, R. A. (2008). Marital happiness and psychological well-being across the life course. *Family Relations, 57*, 211–226.

Karney, B. R., & Bradbury, T. N. (1997). Neuroticism, marital interaction, and the trajectory of marital satisfaction. *Journal of Personality and Social Psychology, 72*, 1075-1092.

Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic Data Analysis.* Guilford Press.

Kiecolt-Glaser, J. K., & Newton, T. L. (2001). Marriage and health: His and hers. *Psychological Bulletin*, *127*, 472-503.

Langston, C. A. (1994). Capitalizing on and coping with daily-life events: Expressive responses to positive events. *Journal of Personality and Social Psychology, 67,* 1112-1125.

Larson, R. W., Richards, M. H., & Perry-Jenkins, M. (1994). Divergent worlds: The daily emotional experiences of mothers and fathers in the domestic and public spheres.

Journal of Personality and Social Psychology, 67, 1034-1046.

Lauc, G., Zvonar, K., Vuksic-Mihaljevic, Z., & Flögel, M. (2004). Post-awakening changes in salivary cortisol in veterans with and without PTSD. *Stress and Health, 20*(2), 99-102

Laurenceau, J., & Bolger, N. (2005). Using diary methods to study marital and family processes. *Journal of Family Psychology, 19,* 86-97.

Lavner, J. A., & Bradbury, T. N. (2012). Why do even satisfied newlyweds eventually go on to divorce? *Journal of Family Psychology, 26,* 1-10.

Lawrence, E., Rothman, A. D., Cobb, R. J., Rothman, M. T., & Bradbury, T. N. (2008). Marital satisfaction across the transition to parenthood. *Journal of Family Psychology, 22,* 41-50.

Locke, H. J., & Wallace, K. M. (1959). Short marital-adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living, 21,* 251-255.

Lynn, R. & Martin, T. (1997). Gender differences in extraversion, neuroticism, and psychoticism in 37 Nations. *The Journal of Social Psychology, 137*, 369-373.

MacGeorge, E. L., Graves, A. R., Feng, B., Gillihan, S. J., & Brant, R. B. (2004). The myth of gender cultures: Similarities outweigh differences in men's and women's provision of and responses to supportive communication. *Sex Roles, 50,* 143-175.

Matud, M. P. (2004). Gender differences in stress and coping styles. *Personality and Individual Differences, 37,* 1401-1415.

McEwen, B. S. (1998). Stress, adaptation, and disease: Allostasis and allostatic load. *Annals of New York Academy of Sciences, 840,* 33-44.

Miller, G. E., Chen, E., & Zhou, E. S. (2007). If it goes up, must it come down?: Chronic stress and the hypothalamic-pituitary-adrenocortical axis in humans. *Psychological Bulletin, 133*(1), 25-45

Neff, L. A., & Karney, B. R. (2005). Gender differences in social support: A question of skill or responsiveness. *Journal of Personality and Social Psychology, 88,* 79-90.

Ochs, E., Graesch, A. P., Mittman, A., Bradbury, T., & Repetti, R. (2006). Video ethnography and ethnoarchaeological tracking. In M. Pitt-Catsouphes, E. E. Kossek, & S. Sweet (Eds.), *The work and family handbook: Multi-disciplinary perspectives, methods and approaches* (pp. 387–409). Mahwah, NJ: Lawrence Erlbaum Associates.

Pasch, L. A., & Bradbury, T. N. (1998). Social support, conflict, and the development of marital dysfunction. *Journal of Consulting and Clinical Psychology, 66*(2), 219-230.

Pasch, L. A., Bradbury, T. N., & Davila, J. (1997). Gender, negative affectivity, and observed social support behavior in martial interaction. *Personal Relationships, 4*, 361-376.

Philippson, C. (1997). Social relationships in later life: A review of the research literature. *International Journal of Geriatric Psychiatry, 12,* 505-512.

Piedmont, R. L. (1998). *The Revised NEO Personality Inventory: Clinical and research applications.* New York: Plenum.

Pierce, G. R., Sarason, B. E., Sarason, I. W., Joseph, H. J., & Henderson, C. A. (1996). Conceptualizing and assessing social support in the context of the family. In G. R. Pierce, B. R. Sarason, & I. G. Sarason (Eds.), *Handbook of social support and the family* (pp. 3–22). New York: Plenum Press.

Proulx, C. M., Helms, H. M., & Buehler. C. (2007). Marital quality and personal well-being: A meta-analysis. *Journal of Marriage and Family, 69,* 576-593.

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.

Raudenbush, S. W., Brennan, R. T., & Barnett, R. C. (1995). A multivariate hierarchical model for studying psychological change within couples. *Journal of Family Psychology, 9,* 161-174.

Reis, H.T., & Shaver, P. (1988). Intimacy as an interpersonal process. In S. Duck (Ed.), *Handbook of personal relationships* (pp. 367-389). Chichester, England: Wiley.

Rehman, U. S., Gollan, J., & Mortimer, A. R. (2008). The marital context of depression: Research, limitations, and new directions. *Clinical Psychology Review, 28*, 179-198.

Repetti, R. L. (1989). Effects of daily workload on subsequent behavior during marital interaction: The roles of social withdrawal and spouse support. *Journal of Personality and Social Psychology, 57(4),* 651-659.

Repetti, R. L. (1993). Short-term effects of occupational stressors on daily mood and health complaints. *Health Psychology,* 12, 125-131.

Repetti, R. L., Wang, S., & Saxbe, D. (2009). Bringing it all back home: How outside stressors shape families'everyday lives. *Current Directions in Psychological Science,18*(2)*,* 106-111.

Repetti, R. L., Wang, S., & Saxbe, D. (2011). Adult health in the context of everyday life. *Annals of Behavioral Medicine, 42*, 285-293.

Repetti, R. L., Wang, S., & Sears, M. (in press). Using direct observational methods to study the

real lives of families: Advantages, complexities, and conceptual and practical considerations. In J. G. Grzywacz and E. Demerouti (Eds.) *New Frontiers in Work and Family Research.* New York: Psychology Press & Routledge.

Repetti, R. L., & Wood, J. (1997). Effects of daily stress at work on mothers' interactions with preschoolers. *Journal of Family Psychology, 11,* 90–108.

Robles, T., & Kiecolt-Glaser, J. K. (2003). The physiology of marriage: Pathways to health. *Physiology & Behavior*, *79*(3), 409-416.

Rook, K. S., Pietromonaco, P. R., & Lewis, M. (1994). When are depressives distressing to others and vice-versa?: Effects of friendship, similarity, and interaction task. *Journal of Personality and Social Psychology, 67,* 548-559.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55,* 68-78.

Saxbe, D. E. (2008). A field researcher's guide to cortisol: Tracking HPA axis functioning in everyday life. *Health Psychology Review, 2,* 163-190.

Saxbe, D. E., Repetti, R. L., & Nishina, A. (2008). Marital satisfaction, recovery from work, and diurnal cortisol among men and women. *Health Psychology*, *27*(1), 15-25.

Seeman, T. E. (1996). Social ties and health: The benefits of social integration. *Annals of Epidemiology, 6,* 442-451.

Sephton, S. E., Sapolsky, R. M., Kraemer, H. C. and Spiegel, D. (2000). Diurnal cortisol rhythm as a predictor of breast cancer survival. *Journal of National Cancer Institute,* 92, 994–1000.

Shrout, P. E., Herman, C. & Bolger, N. (2006). The costs and benefits of practical and emotional support on adjustment: A daily diary study of couples experiencing acute stress. *Personal Relationships*, *13(1),* 115-134.

Sjögren, E., Leanderson, P., Kristenson, M. (2006). Diurnal saliva cortisol levels and relations to psychosocial factors in a population sample of middle-aged Swedish men and women. *International Journal of Behavioral Medicine, 13*(3), 193-200

Slatcher, R. B., Robles, T. F., Repetti, R. L., & Fellows, M. D. (2010). Momentary work worries, marital disclosure, and salivary cortisol among parents of young children. *Psychosomatic Medicine. 72*, 887–896.

Sullivan, K.T.**,** Pasch, L.A., Johnson, M.J., & Bradbury, T.N. (2010). Social support, problem-solving, and the longitudinal course of newlywed marriage. *Journal of Personality and Social Psychology*.

Taylor, S. E., Klein, L. C., Lewis, B. P., Gruenewald, T. L., Gurung, R. A. R., & Updegraff, J. A. (2000). Biobehavioral reponses to stress in females: Tend-and-befriend, not fight-or-flight. *Psychological Review, 107,* 411-429.

Taylor, S. E., & Stanton, A. L. (2007). Coping resources, coping processes, and mental health. *Annual Review of Clinical Psychology, 3*, 377-401.

Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What next? *Journal of Health and Social Behavior, 35,* 53-79.

Vedhara, K., Tuinstra, J., Miles, J. N. V., Sanderman, R. B., & Ranchor, A. V. (2006). Psychosocial factors associated with indices of cortisol production in women with breast cancer and controls. *Psychoneuroendocrinology, 31,* 299-311.

Verhofstadt, B., Buysee, A., & Ickes, W. (2007). Social support in couples: An examination of gender differences using self-report and observational methods. *Sex Roles, 57,* 267-282.

Wang, S., Repetti, R. L., & Campos, B. (2011). Job stress and family social behavior: The moderating role of neuroticism. *Journal of Occupational Health Psychology*, *16*, 441-456.

Watson, D. (2000). *Mood and temperament.* New York, NY: Guilford Press.

Whisman, M, A. (1999). Marital dissatisfaction and psychiatric disorders: Results from the National Comorbidity Survey. *Journal of Abnormal Psychology, 108,* 701-706.

Whisman, M. A., & Uebelacker, L. A. (2009). Prospective associations between marital discord and depressive symptoms in middle-aged and older adults. *Psychology and Aging, 24,* 184-189.

Wills, T. A. (1991). Social support and interpersonal relationships. In M. S. Clark (Ed.), *Prosocial behavior (pp. 265-289).* Newbury Park, CA: Sage.